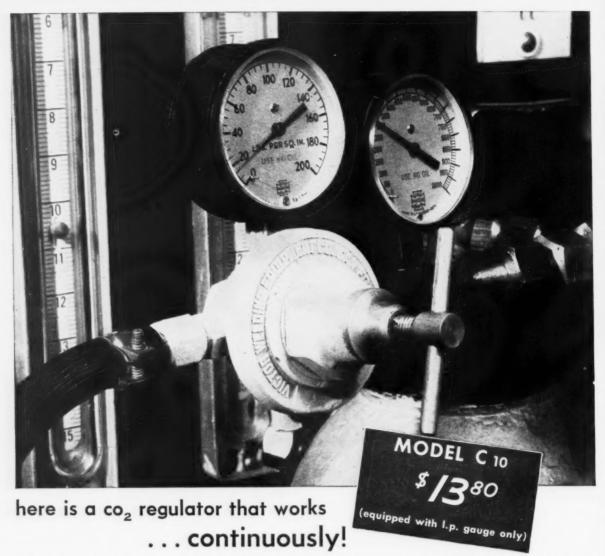
WESTERNINDUSTRY



• Preparing to catch salmon: Pacific Coast states and Alaska are the world's largest fish canning area. For details see page 5.

IN THIS ISSUE: Crossroads on Fuel Supply; Small Plant Production Control; Meeting Parts-Supplying Schedules; New Production Techniques; Market Research Eliminates Losses; Conveyors Cut Costs; Utah Industrialists Claim Superior Labor Force.



 $CO_2$  gas freezes on the slightest provocation; it freezes so easily that a pressure regulator which can handle this gas successfully is NEWS.

Here is the reason WHY-

VICTOR engineers have designed an internal regulator nozzle mechanism so perfectly adapted to the vagaries of this gas that it automatically removes from the seat mechanism any dry ice formation as effectively and as swiftly as does a good snow plow clear the road.

The regulator inlet also has been carefully designed to avoid formation and retention of dry ice.

WHAT WILL IT DO?

Take, for instance, the regulator in this illustration . . . it is attached onto a six cylinder  $CO_2$  manifold and, at an initial delivery pressure of 50 psi., delivers 10 cu. ft. of  $CO_2$  gas per minute. Because of the highly refrigerant nature of this  $CO_2$  gas, the initial delivery pressure of 50 psi. rapidly rises to 84 psi., and with this delivery pressure it will maintain sufficient accuracy to affect the delivery volume by less than  $\frac{1}{2}$  cu. ft. per minute.

By lowering the delivery volume, the delivery or shut-off pressure diminishes likewise. In other words, setting the delivery volume from 3 to 5 cu. ft. per minute, maximum delivery pressure will be 62 psi. Setting a delivery pressure from  $\frac{1}{2}$  to 2 cu. ft. per minute, the maximum delivery pressure will be 54 psi., with a delivery volume fluctuation of less than 1/10th cu. ft. per minute.

The principle upon which this VICTOR  $CO_2$  regulator operates so successfully will, of course, permit greater delivery volume, but for average expectations the above stated delivery pressures and relative volumes will be of sufficient interest to the experienced engineer to suggest the high quality and dependability of this new VICTOR  $CO_2$  gas regulator.

Improved internal nozzle characteristics which prevent the accumulation and formation of dry ice upon the seat mechanism is the primary reason why you will want to test and own this new VICTOR CO<sub>2</sub> regulator.

victor equipment company . 844 folsom street . san francisco 7

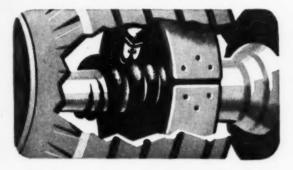
# THIS NEW ALL-PURPOSE GREASE SIMPLIFIES ALL YOUR LUBRICATION!



**1.** UNOBA—the sensational new grease developed by Union Oil Company—is the first all-purpose lubricant in history that resists both heat and water! With Unoba, lubrication is greatly simplified, for this *one* grease performs jobs that formerly required *many* different types, grades and brands of greases!



**2.** UNOBA is a barium base grease with exceptional heatproof, waterproof qualities. Boiling water or dry heat won't cut its tenacious film. UNOBA will give effective lubrication for trucks or equipment at temperatures much below freezing. And at temperatures up to 300°F. it still protects your equipment.



**3.** In addition to these qualities, UNOBA has an unusual adhesiveness to metal, giving maximum protection against rust and corrosion of parts. It maintains excellent grease structure under severe mechanical working and does not deteriorate in storage even over long periods.



**4.** Today UNOBA is performing hundreds of different jobs in all branches of industry—in factories, mines and mills, and on construction jobs and farms. Why not simplify your lubrication with this unique *all-purpose* grease that protects against rust, prevents excessive wear and prolongs equipment life?

# **UNOBA**



For additional information phone your local Union Oil Representative, or wire Sales Department, Union Oil Company, Los Angeles 14, California.

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EXIDE-IRONCLAD POWER AND BATTERY ELECTRIC TRUCKS

Keep materials moving steadily, safely, at minimum cost ....

You can make substantial savings in materials handling costs by using the modern, efficient method employed by so many others throughout your industry. They have delegated their loading, unloading, lifting, hauling, placing and stacking to the time-and-cost-cutting team—battery electric trucks and Exide-Ironclad Batteries.

Exide-Ironclad Batteries have the high power ability, the high maintained voltage and the high capacity that materials handling requires. You can always count on Exide-Ironclad Batteries for dependability, long-life and ease of maintenance.

Write us for a FREE copy of Exide-Ironclad Topics which contains "Case Studies" of materials handling problems. It tells how to cut handling costs up to 50%... covers latest developments in handling materials from receiving to shipping.

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Editor

DLUME XII	J	UL	Υ, 1	94	7							NO.
Editorial Page												
Editorial Comment					٠							19
Mail Box					6		•					19-23
The Western Outlook N	lew	/s .	s	tat	istic	cs						25-31
Spotlight on the News .		•			•				•	٠		33
Articles												
At the Crossroads on Fue	l Su	ippl	y									35-37
Controlling Production in								٠				38-39
Meeting Schedules in Supp		~					٠	۰	٠			40-41
Saving Hand Operations												10 10
Finishing Electrical												42-43
Steering Away From Losse									0	۰	•	44-45 46-48
Conveyor Combinations R Utah Industrialists Claim								٠	٠		۰	40-48
Mechanical Kinks		iper	ior L	apo	ro	rce	٠		•	٠	•	50
Mechanical Kinks .							*					70
<b>Washington News Letter</b>		٠	٠	٠	٠	٠	٠	٠	٠	٠	۰	51-52
Regional Reviews												
Tehachepi to Tijuana				۰								58-61
Sierras to the Sea .									٠			62-65
The Continental Divide	0	٠.					٠				0	66-69
The Pacific Northwest					٠							70-75
The Wasatch		٠	٠	•	٠	٠	۰	٠	٠	٠	٠	76-77
Departments												
Westerners at Work												54-57
Labor and the Industrial							٠	0		0		78-80
The West on Its Way											0	81-92
Trade Winds							0	0				93
New Methods, Materials	, Ec	quip	ment						0			94-96
Helpful Literature .	۰	۰	۰	٠	9	٠	۰	٠	۰	۰		97
Advertisers' Index			٠	٠		٠	•	٠		٠		98

### Front Cover

The Puget Sound area, the Columbia River and Alaska are the three great salmon and halibut fishing centers on the Pacific Coast. Products of the fish canneries serve the entire world. The picture, from Pacific American Fisheries, Incorporated, of Bellingham, Wash., shows a Puget Sound cannery tender.

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Acceptance under the Act of June 5, 1934. Authorized January 21, 1947.

# KAISER ALUMINUM

HOW PERMANENTE METALS-IN A SINGLE YEAR-HAS BECOME A KEY FACTOR IN

AMERICAN INDUSTRY-PRODUCING 175 MILLION POUNDS OF KAISER ALUMINUM!

One year ago, for the second time in over half a century, a new force stirred the aluminum industry.

After careful planning and organization, The Permanente Metals Corporation—led by Henry J. Kaiser and associates—started to carve out a permanent place in the aluminum world.

The first objective: To produce aluminum in tremendous volume and thus offset the shortage which was then crippling the production of finished products.

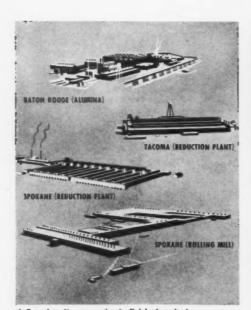
That this objective was achieved ... and surpassed ... is revealed by one statistic—175 million pounds of plate, sheet, and strip aluminum in the

first year. Almost as much as the entire industry produced in the most productive year before the war!

The pictures and text on these pages partially reveal how this was done.

What they cannot hope to portray is how administrative vision, technical skill, and a completely coordinated operation combined to make such production possible.

This same combination is now achieving Permanente Metals' second objective—to make Kaiser Aluminum, already second to none, the finest in the land!



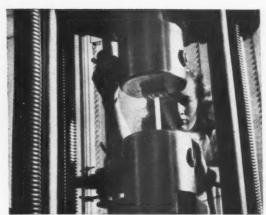
1. From bauxite processing to finished product—This chart gives a step-by-step picture of Permanente Metals' aluminum operation . . . which controls the production of quality aluminum from its huge bauxite processing plant at Baton Rouge, Louisiana . . . through its mammoth reduction and finishing plants at Spokane and Tacoma, Washington. Such integration assures fast, reliable service.



2. Preparing the "pig"—Operating eight modern pot lines, Permanente's reduction plants at Spokane and Tacoma, Washington, can turn out over 700,000 pounds of pure pig aluminum daily. This pig aluminum is then sent to the rolling mill, also in Spokane, where it is converted into alloyed ingots and then rolled into plate, sheet and strip.



3. Down the "hot line"—Permanente Metals' 53-acre Spokane rolling mill is one of the largest, most modern plants of its kind in the world. An example of its up-to-the-minute equipment is the "hot line," the giant rolls which convert alloyed aluminum ingots into sheet. This rolling mill is capable of producing 288 million pounds of Kaiser Aluminum a year.



4. Quality first—With production reaching new peaks, Permanente Metals is now concentrating on producing the highest quality aluminum ever offered to manufacturers. Constant chemical and physical tests plus infinite care in handling assure that customer requirements are not only met, but exceeded.



5. Ready to go—Here is the result of just one day's rolling mill production of Kaiser Aluminum. Ready to ship, it will go into aircraft, buses, building materials, house trailers, appliances, garage doors,

kitchen utensils . . . will be welcomed by scores of America's leading manufacturers who rely on Permanente Metals for quality aluminum, fast, dependable deliveries, and an eagerness to be of service!

Ready to serve you-today...

# Kaiser Aluminum

a Permanente Metals product

DISTRIBUTED BY PERMANENTE PRODUCTS COMPANY, KAISER BLDG., OAKLAND, CALIFORNIA... WITH OFFICES IN: Seattle, Wash. · Oakland, Calif. · Los Angeles, Calif. · Dallas, Texas · Wichita, Kan. · Kansas City, Mo. · St. Louis, Mo. · Atlanta, Ga. · Minneapolis, Minn. · Milwaukee, Wis. Chicago, Ill. · Cincinnati, Ohio · Cleveland, Ohio · Detroit, Mich. · Boston, Mass. · Hartford, Conn. · Buffalo. N.Y. · New York City, N.Y. · Philadelphia, Pa. · Washington, D.C

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First Flue!

Nine Different Groups of fluorine compounds-embracing half a hundred organic and inorganic products-these are the contributions of General Chemical's Fluorine Research to American Industry to date. Many more are ready for announcement, for General Chemical's work in the field of fluorine chemistry is extensive and continuous, ever reaching into the unexplored.

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### ► General Chemical Fluorine Compounds

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### 1 Alkali Fluorides

Potassium Fluoride Sodium Fluoride

### 2 Metal Fluorides

Aluminum Fluoride
Antimony Trifluoride
Barium Fluoride
Cadmium Fluoride
Calcium Fluoride
Chromium Fluoride
Copper Fluoride
Ferric Fluoride
Lead Fluoride
Magnesium Fluoride
Nickel Fluoride
Strontium Fluoride
Zinc Fluoride

### 3 Double Fluorides

Potassium Chromium Fluoride Potassium Ferric Fluoride Potassium Titanium Fluoride

### 4 Non-Metal Fluorides

Boron Fluoride—Diethyl Ether Complex Sulfur Hexafluoride

### 5 Acid Fluorides

Ammonium Bifluoride Potassium Bifluoride Potassium Polyacid Fluoride "50" Sodium Bifluoride

### 6 Alkali Fluoborates

Ammonium Fluoborate Potassium Fluoborate Sodium Fluoborate

### 7 Metal Fluoborate Solutions

Cadmium Fluoborate
Chromium Fluoborate
Cobalt Fluoborate
Copper Fluoborate
Ferrous Fluoborate
Indium Fluoborate
Lead Fluoborate
Manganese Fluoborate
Mercuric Fluoborate
Nickel Fluoborate
Silver Fluoborate
Silver Fluoborate
Ziannous (Tin) Fluoborate
Zinc Fluoborate

### **8 Fluorine Acids**

Fluoboric Acid Fluosulfonic Acid Hydrofluoric Acid Hydrofluoric Acid, Anhydrous

### 9 Organic Fluorine Compounds

Ethylidene Fluoride (Genetron\* 100)
1,1,1 Difluorochloroethane
(Genetron\* 101)

\*Res. U. S. Pat. Off.

147

# The RIGHT INSULATION, correctly applied, NEVER GROWS OLD



ENGINEERING: In planning your insulation job, first call in an experienced insulation engineer. Johns-Manville... Insulation Headquarters for more than 75 years... maintains a staff of insulation experts. Each man knows how to take the guesswork out of your job... make it "right the first time."



RIGHT INSULATION: Any insulation will save money—but only the *right* one will save the most for the longest period of time. J-M 85% Magnesia is the most widely used of all industrial insulating materials . . . and one of a wide range of J-M insulations for every service and temperature.



correct application: No insulation is better than the man who installs it. J-M Insulation Applicators are industry's first choice for completely efficient jobs because: (1) They are trained in all phases of insulation application; (2) They employ skilled mechanics and up-to-date application methods. You can rely on them for thorough, dependable and speedy workmanship.



35 YEARS YOUNG! J-M 85% Magnesia was applied to pipes of the Eclipse Mill Company, Everett, Washington, back in 1912. Because this job was engineered right and applied right, it is still providing dependable insulation . . . still keeping fuel costs low. Get expert help with your insulation problem by writing to Johns-Manville, Box 290, New York 16, N. Y.



JOHNS-MANVILLE Jirst in INSULATIONS

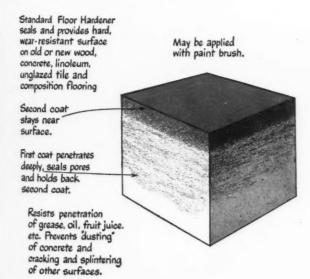
# STANDARD ENGINEERS NOTEBOOK

# Special hardener reduces wear on plant floors

Because it hardens the texture of flooring and produces a non-slippery, tough surface, Standard Floor Hardener minimizes wear on plant floors. It prevents grit from being ground into the floors and helps seal out grease, oil, fruit juice, etc.

Standard Floor Hardener is made from special petroleum oils, wood oils, gums and thinners like those used in the manufacture of quality varnishes. It penetrates deeply into concrete, wood, linoleum, unglazed tile and composition flooring and seals the pores. It should not be used on rubber or asphaltic surfaces.

Standard Floor Hardener provides an ideal base for the application of floor polishes and makes surfaces much easier to clean. On concrete floors, it resists decomposition or "dusting". On wood and other types it prevents cracking, chipping and splintering. Depending on porosity of a floor, a gallon covers up to 600 square feet.



Standard Diesel Fuel is specially stored and shipped to insure 100% cleanliness.

Has sufficient body to lubricate fuel pumps and other moving fuel-system parts.

Will not plug tiny injector openings or cause extra wear.

Typical Injection Valve.

**Atomizes** 

completely.

## Standard Diesel Fuel lengthens injector life

Many Diesel engine operators have minimized fuel system trouble and made parts last longer by the use of 100%-clean Standard Diesel Fuel.

This special fuel is manufactured from the finest crudes and is completely distilled. Numerous checks and rigid control during manufacture assure a uniform high-quality product with just the right body to lubricate all parts in engine fuel systems.

To prevent contamination, Standard Diesel Fuel is handled in separate pipelines, tankcars, trucks and containers. It comes free of grit and moisture, the principal causes of injection valve wear.

Standard Diesel Fuel flows freely and atomizes completely. It burns smoothly, producing maximum power in engines.

It is recommended for all Diesel engines except those requiring a special high-cetane fuel where Standard Locomotive Diesel Fuel and Standard Automotive Diesel Fuel are recommended.

Standard Fuel and Lubricant Engineers are always at your service. They'll gladly give you expert help — make your maintenance job easier. Call your local Standard Representative or write Standard of California, 225 Bush St., San Francisco 20, California.

FOR EVERY NEED A STANDARD OF CALIFORNIA JOB-PROVED PRODUCT

# SPECIALTIES



Square-bend "U" bolts, lug-wrench forgings, turnbuckle stubs, and chain links are a few of the large variety of specialties produced by Bethlehem Pacific's bolt-and-nut plants. Some of these specialties are sold in the semi-finished form while the others are ready for immediate use.

Manufacturers may buy either the semi-finished specialties for further processing in their own plants or the finished specialties for use in their various manufactured products. Railroads, construction contractors and shipbuilders also use these specialties where ordinary fastenings are not suitable.

All of Bethlehem Pacific's boltand-nut plants are equipped to turn out rolled, drawn, forged or upset steel specialties in addition to their regular line of headed-andthreaded products. If you need specialties in large or small quantities, or if you need technical information get in touch with the nearest Bethlehem Pacific office.

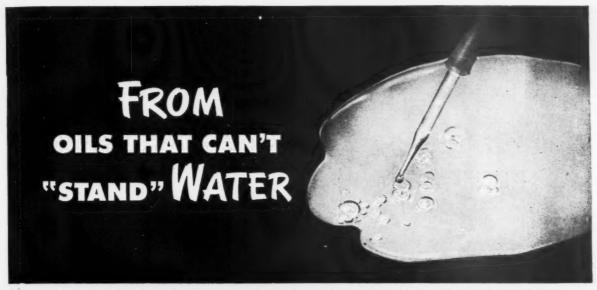
**Bethlehem Pacific Coast Steel Corporation** 

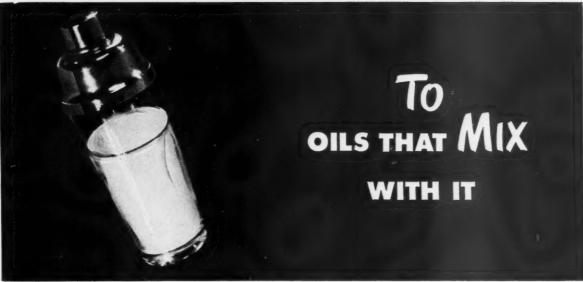
Sales Offices: Los Angeles, San Francisco, Portland, Seattle, Salt Lake City, Honolulu

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BETHLEHEM PACIFIC







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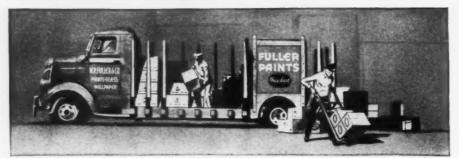
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## CAPABLE ENOUGH to do it right -



### NEAR ENOUGH to do it without delay —

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San Francisco 19, California.



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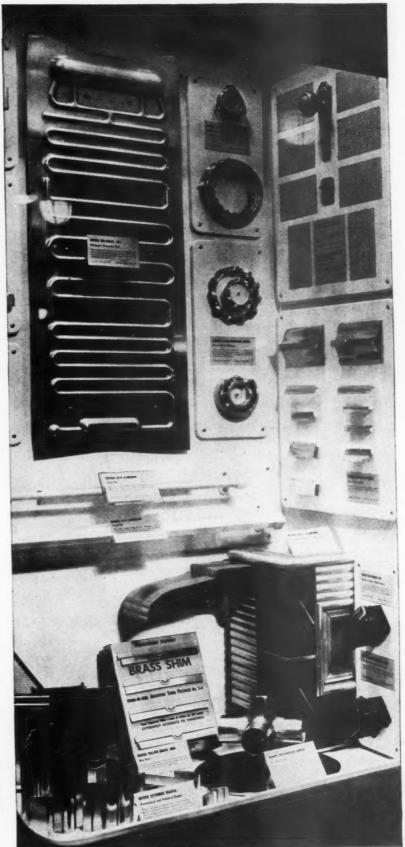
We solicit your orders for these materials.

## REVERE

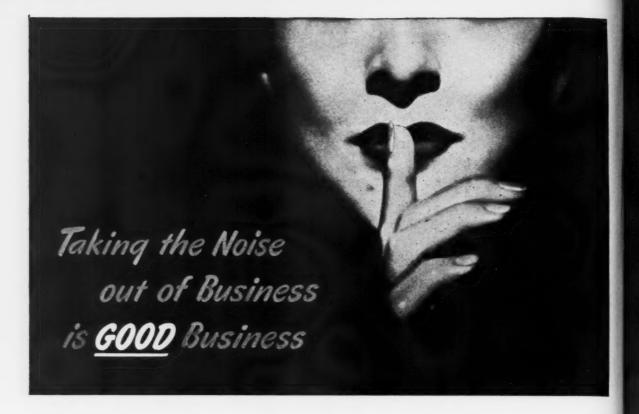
COPPER AND BRASS INCORPORATED

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Pacific Coast District Sales Offices in San Francisco, Seattle, Los Angeles



47



**O**VER 100,000 Acousti-Celotex installations in buildings of *every* kind *prove* that taking the noise out of business is good business.

From coast to coast, the nation's outstanding business concerns are reducing noise with Acousti-Celotex drilled fibre tile. Installations in offices, factories, banks, stores, theatres, hospitals, schools and churches have made this the most widely used of *all* acoustical materials.

And here's just one example of the results of sound conditioning. By actual test one company decreased employee turnover 47%...decreased absences 37%...decreased typists' errors 29%. At the same time the efficiency of employees was increased 8.8%!

All done with Acousti-Celotex sound conditioning, the magic which creates a comfortable working environment...soothes taut, tired nerves... improves morale...steps up the efficiency of workers. So, no matter what your noise problem may be, consult the Acousti-Celotex distributor for your territory. He is a member of the world's

most experienced sound conditioning organization with the "know how" derived from thousands of acoustical installations in every type of building, large and small. And he features the world's most extensively used sound conditioning material. Consult him with confidence, too. His advice is yours without obligation... and he guarantees results. A note will bring him to your desk.

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FOR WESTERN INDUSTRY



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   ...strength with lightness

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You have a share in the strip steel stock that is being added to our expanding inventory. We can make this a preferred stock of increasing value if you will tell us the specialty strip steel items you want us to add to our growing list of available products.

s - Alley - Carbon Strates



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THE COLD METAL PRODUCTS CO. WESTERN WAREHOUSE DIVISION

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### In Our Mail Box

### Foremen Can Improve **Production Costs**

Editor, Western Industry:

Regarding J. E. O'Hagan's article concerning the relationship of job costs to foremen, we are thoroughly in agreement with Mr. O'Hagan's statements that foremen properly instructed and with the proper interest in the company can very materially improve production costs.

The Fluor Corporation organized a chapter of the National Association of Foremen some nine months ago. Our organization, Fluor Su-pervisors Club, has been meeting regularly since that time and at each meeting some department of our company has presented rather complete details of the operation of that department to

all Club members

In addition, all foremen in our manufacturing department have been given complete de-tails on job costs and daily and weekly productails on job costs and daily and weekly produc-tion figures. We have asked the foremen to make all suggestions they think proper con-cerning better working conditions and speeding company production. The results to date have been very gratifying. The monthly output of our manufacturing department has nearly doubled since the inception of this program. During that time we have, of course, made considerable improvement in equipment and technique in order to accomplish this increased production.

W. EARL DUNN Vice-president The Fluor Corporation, Ltd. Los Angeles, California.

### Lower Freight Rates Through Cooperation

Editor, Western Industry:

Reference is made to the editorial comment in the May issue of Western Industry concerning the "cooperation on freight rates."

I believe there is considerable merit in the thought which you express regarding cooperation on freight rate matters. However, there are several points which I would like to clarify

in this regard.

First, you state that the mixed carload rate campaign was successfully conducted by the California Manufacturers Association. This is not quite the case. The Transportation Department of the Los Angeles Chamber of Commerce negotiated this matter with the railroads many years before the California Manufacturers Association interested themselves in the matter.

In the last campaign, which was successful, the Los Angeles Chamber of Commerce organized the shippers of the Pacific Coast, and worked in close liaison with the Chambers of Commerce of the major cities on the Coast, as well as the California Manufacturers Association

I do not believe the success of this campaign was due to any one group or organization, but rather due to the cooperation on the part of all shippers and associations, which made it possible to secure the eastbound mixed carload privilege as well as the establishment of the all-commodity rate eastbound.

In connection with cooperation in the Geneva freight rate case, I think you will find that one of the most potent factors in the successful establishment of the 48c rate from Geneva, Utah, was accomplished through the efforts of the Steel Committee of the Western States Council. No greater cooperation than was evidenced

(Continued on page 21)

### EDITORIAL COMMENT

Fontana Adjustment Inevitable

SYMPATHY or no sympathy for Henry J. Kaiser, dislike or no dislike for his penchant for flamboyant publicity, agreement or no agreement with his specific refinancing proposals for the Fontana steel mill, the government should scale down its \$123,000,000 loan on the property to a reasonable basis.

There just isn't that much money in the steel business to pay out on any such loan, whatever the history of the original financing. If Kaiser should throw up the sponge, the government then will have to sell the mill to someone else for whatever it will bring, and although some other steel company, like Republic or even U. S. Steel, would undoubtedly like to bid on it, the government would have to kiss most of the loan goodbye.

It is a good property, and the industrial growth of southern California would inevitably have brought a similar mill into existence sooner or later, even without the pressure to produce steel for ships at a critical period in the war that caused it to be opened

The action of the steel committee of the Western States Council, in endorsing a readjustment on a comparable basis to the sale price of Geneva, has, in Western Industry's opinion, correctly expressed the desire of business and industry in the West for the existence of an independent factor able to compete on equal terms with U. S. Steel, Bethlehem and any other comers in the field. Chambers of commerce also have been going on record in favor of the adjustment of the Fontana loan.

### A Turn in the Road

T LOOKS as if the time had about arived for a new approach to the big-scale financing field, under which the initiative will be generally expected to rest with private enterprise, with the government stepping in only when the projects are so big or extend over so many years that they should be considered largely

as public welfare investments.

Private enterprise has its own sins to thank for the government preempting this field in recent years, although many diehards among the rugged individualists seem to be still unaware of the fact. The wildly speculative era of the '20s taught the American public that some pretty stiff policing of the investment field was essential, and it is reasonable to assume that this situa-tion is now fairly well in hand. Similarly, the New Deal period and the war have shown that government financing is not a satis factory substitute for properly regulated private enterprise, because it is far too often a convenient opportunity to dodge the responsibility for seeing that the investor gets either his money's worth or his original dollar back.

We are now having the experience of Congress reducing or abolishing the appropriations for Western projects, such as Central Valley in California and new dams for hydro power in the Pacific Northwest, as one method of carrying out a national desire to start cutting down present colossal government expenditures. If such developments are really self-liquidating, as often proclaimed, perhaps the time has come for the government to consider having them privately financed.

### Individual Choice

NE can either be part of the problem, or part of the solu-tion." For this remark we are indebted to a social worker among a minority national group in the West.

# do you know Roller Chain...

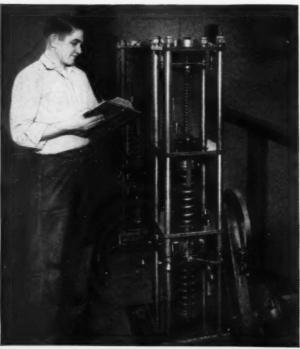


AND HERE'S WHAT that means to you. Where your equipment is subjected to momentary overloads and sudden strains, the inherent elasticity of roller chain will help absorb those damaging shocks and protect your equipment.



2 WE'VE ACTUALLY PROVED that roller chain is elastic. With this testing machine, designed and built by our engineers, we stretch this small section of Baldwin-Rex Roller Chain about 1/8-inch with each load application. We do this more than 10,000,000 times. Each time the chain must withstand the load and retract to its original length in order to meet our rigid specifications.





3 TAKE THIS CALENDER DRIVE. The elasticity of that Baldwin-Rex Chain enabled it to withstand the severe shock loads as lumps of crude rubber are squeezed through the rolls. It's been in service more than 30,000 work hours and is still going strong. Previous drives gave only 6 months' service. That's real proof!



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(Continued from page 19)

during this case could be expected on a matter of such vital importance to Western develop-

It is extremely difficult to arrive at a common basis which will result in cooperation by all interests on freight rate matters. This is due primarily to the different geographical locations, interests and distribution factors which exist. On those matters where we have a common interest, cooperation is and will continue to be, accomplished through liaison with all Chambers of Commerce and the Western Steel Committee, as was carried out in the Geneva steel case.

I believe you will find, upon further investigation, that the cooperation which you speak of in your editorial is already in effect on those matters where common interest for Western development is present.

HAROLD W. WRIGHT General Manager Los Angeles Chamber of Commerce.

### Heads in the Sand

Editor, Western Industry.

Please send me collect 350 copies of "Why Is Politics Your Business?" I would like to distribute these copies to the Board of Directors of our local Chamber of Commerce, who like many such organizations, have their heads buried in the sand.

BARRY GOLDWATER Goldwaters Phoenix, Arizona.

### Facing the Facts

Editor, Western Industry:

In regard to the editorial appearing in Western Industry (April) I want you to know that I am in full and complete accord with you. During the last few years I have constantly urged the mining industry to put itself before the public in its true and proper light. Generally hand our stockholders once a year a report which contains a mass of figures which mean little or nothing to many individual stockholders except probably the item shown, "Net Income for the Year." I think we should keep our stockholders a little better advised with narrative reports so that they may be a little better educated about their property and the mining industry in general and to spread this education to the public in general.

The mining industry gets enough of adverse publicity through the Securities and Exchange Commission and other governmental agencies, to say nothing about the horrible picture of mining conditions painted by Associate Justice Murphy in the decision rendered in the Jewel Ridge Coal Case and others. I do not think that conditions as painted by Justice Murphy actually do exist even in the coal mines and they most certainly do not exist in our metal mines out here in the West. I agree with you that something has to be done to let the public know a little more as to what mining really is.

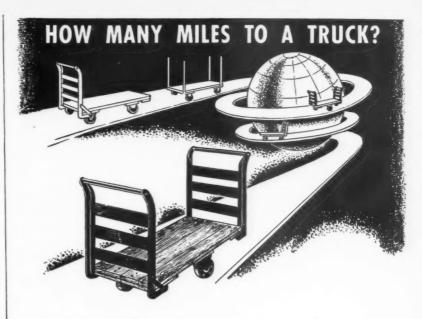
I. B. HAFFNER General Manager Bunker Hill & Sullivan Mining & Concentrating Co. Kellogg, Idaho.

Editor, Western Industry:

Despite the rather uncomplimentary remarks made in introducing me at the Colorado Mining Association dinner in Denver, I am sympathetic to the problems confronting the true miners in the mining industry.

I am grateful to you for your editorial and I think it fair comment. However, we here at the Commission are duty bound to carry out, certainly, the spirit of the Securities Act, which we propose to do with the least amount of inter-

(Continued on page 23)



COLSON platform trucks are built to give you almost countless miles of hard service-to speed up your material handling -to ease up hard work.

If you want wood platform trucks, you'll find Colson trucks are made of clear hardwood, dried and surfaced on all four sides. Deck boards, casters and push handles are bolted through thick, hardwood cross bolsters with countersunk carriage bolts. Steel platforms are 12 gage with channel shaped edges. Casters are mounted on cross angle bolsters.

Handles are angle iron, heavily reinforced at the ends. Tubular steel push bars. Heavy steel cross slats. Removable side slats, pipe stakes, pull handles are optional on all models.



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Detail of shaker channel with hook for supporting Dustube filter bag.

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SHAKER CHANNEL BEARING
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As illustrated above a Dustube is installed simply by inserting the bottom in a cell plate above the dust hopper and hanging the top on a hook attached to the shaker channel. Only one man is needed. He works on the clean air side and needs no tools. Shrinkage of cloth does not affect the ease and speed of this operation because there are no close-fitting frames or screens to bind the fabric. The cloth in a Dustube has unusually long life because it is never under tension and has no metal contacts to corrode or abrade it. Only the finest float dust ever reaches the tubes, never the coarse heavy particles. Dustube filters are always visible for quick inspection, and their condition can be determined without any dismantling whatever. To protect against costly maintenance and lengthy down-time that cripples production, investigate Dustubes.

Dustube in position.

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WRITE FOR CATALOG 72
A 54 page illustrated book showing the full line of DUSTUBE dust collecting equipment. Contains valuable data on ventilation.



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Mishawaka, Indiana



(Continued from page 21)

ference with the flow of legitimate venture capital such as is needed in the opening of mines.

EDMOND M. HANRAHAN Commissioner Securities & Exchange Commission Philadelphia 3, Pa.

### Denver's Library

Editor, Western Industry:

The news letter from Denver in your May issue commenting on the Science and Engineering Department of the Denver Public Library and its service to engineering and industry in this region is well written and very much to the point. We appreciate very much the publication of this description of the library in your magazine.

MALCOLM G. WYER Librarian The Public Library Denver.

### On the Metals Congress

Editor, Western Industry:

After visiting the Western Metals Congress, we certainly feel that there are constantly new developments in the metal working industries on which the present-day manufacturer must keep himself informed.

As we all know, no business or individual can stand still. They are either going ahead, making progress, or going backwards. Western Industry and other similar publications are very valuable in keeping those in the metal working industries up to date on the latest materials and procedures.

CHARLES HOEHN, JR. Plant Manager South San Francisco Plant Enterprise Engine & Foundry Co.

### Co-op Supporter

Editor, Western Industry:

Years ago there used to be a firm in San Francisco by the name of G. E. Witt Company. They made a combination oil-burner and feed-water regulator that would keep the steam within a pound and the water within an inch of the point desired. Can you advise me if said firm is still in San Francisco, and if so what is their mailing address, and do you know of any other firms in the same line of service.

I have greatly enjoyed reading your magazine for the past few years and am certain you are doing a great service for our Western Empire, although I cannot help noting the tiny adroit digs you have in store for the Co-ops.

As an orange grower and member of the California Fruit Growers Exchange, a Co-op, I am mindful of the fact that but for this Co-op we would be out of business. For the life of me I do not see why Co-ops should be taxed when it is taken out of our income tax.

JOHN W. POWELL Shops Foreman Honolulu Oil Corporation Taft, California.

### More Ion-Exchange

Editor, Western Industry:

Our client, the Corn Products Sales Company, has requested us to obtain for them twelve reprints of the article which appeared in your lanuary. 1947, issue titled, "Western Sugar January, 1947, issue titled, "Western Sugar Plants Pioneer in New Ion-Exchange Process." We would appreciate your mailing these reprints direct to:

W. E. Hecht, Adv. Dept. Corn Products Sales Company New York 4, N. Y.

47

P. P. HOFFMAN C. L. Miller Company Advertising New York 17, N. Y.



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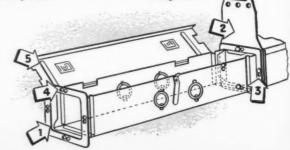


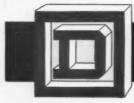
Power where you want it—when you want it—without buying or moving long runs of conduit.

That's why so many plants use SQUARE-Duct to carry feeders, branch circuits, and other groups of conductors. SQUARE-Duct saves time and money every time a machine is moved or a new one added. Knockouts every three inches along the duct provide complete flexibility of machine location. Circuits are easily accessible for inspection or maintenance.

The initial cost of SQUARE-Duct is comparable to that of conduit wiring. Installation cost is substantially lower. For complete details . . . call your Square D Field Engineer, or write Square D Company, 6060 Rivard Street, Detroit 11, Michigan, for Bulletin 6000.

- Drawn collar affords secure support for the duct and automatically aligns each length to prevent twisting. It also serves as a stable connection to the adjacent length equipped with a similar collar.
- Notice how hanger fits securely between two lengths of SQUARE-Duct. Hangers usually can be placed at end of every five-foot length to prevent sagging and twisting of duct.
- Hanger is bolted to both sides, top and bottom, affording even distribution of weight and offsetting any tendency to twist.
- Double keyhole screw slots help in making alignment adjustments.
- Emboss on cover, both sides and bottom, protects wires from scraping on sharp edges when being pulled through duct.





SQUARE D COMPANY

DETROIT

MILWAUKEE

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### THE WESTERN OUTLOOK.. News... Statistics...



Manufacturing employment about holding its own . . . Usual California seasonal decline in unemployment disappointing . . . Worldwide fertilizer demand spurs Western phosphate development . . . Northwest short of fuel for power . . . Steel bars and shapes easier . . . Aluminum market affects two Western plants . . . Fruit canning prospects uncertain

### Employment Picture (By C.D.E.)

THE current situation is changed little from that outlined in the last issue. Employment in the seasonal industries is continuing to rise, concealing the more important fact that the nonseasonal industries (including most manufacturing) are merely holding their own. In other words, there is still no sign of a strong upsurge in any line likely to offset the inevitable weakness in the soft goods fields.

Unemployment is low in the Western states which are dependent upon agricultural and forest products. Nevada, however, reports unemployment above a year ago, while the usual seasonal decline in unemployment in California has been delayed and is definitely disappointing. Arizona unemployment is still high with even skilled craftsmen available. (Around 100 carpenters were recently recruited in Phoenix for work in Alaska, according to the State Employment Service.)

"The growing surplus of labor in Los Angeles County is beginning to include nearly every type of worker," reports John Gaffey, Department of Commerce analyst. "Unemployed 'white collar' workers are increasing in numbers and clerical and sales jobs are harder to get. . . Local relief agencies report a heavy increase in case loads during the winter of 1947-8, with a much larger number of employable

persons. . . . Increased numbers of inmigrants have been applying to relief agencies for funds to return home. . . . Preliminary data indicate that the 1947 spring rise in manufacturing employment has been less than the usual seasonal rise in many industries."

Even these states with significant unemployment indicate, however, that employment is at an all-time high for this time of year, reflecting apparently the permanent population growth.

While the *current* picture is thus one of high employment and production, the *outlook* is still for readjustment downward. Only the timing and extent remain subject to speculation.

In evaluating the seriousness of the prospective recession, most of the pertinent factors are on the optimistic side. As compared with 1920-21, unemployment insurance will place a floor under wage-earner purchasing power; government farm price support will do the same for agricultural income; bank deposit insurance will prevent the disastrous "panic" effect of bank failures; the unprecedented size of liquid assets held by corporations and large "savers" will lessen the volume of forced liquidation of inventory and will encourage prompt expenditures for planned maintenance and expansion as soon as costs become more reasonable; our

loans and gifts abroad will maintain the foreign demand for American goods.

And even more important, the extensive advertising of a forthcoming recession has caused business men generally to prepare for the problem with the result that major business failures and forced liquidations will be minimized. (In other words, I hold no brief for the viewpoint that we are 'talking ourselves into a recession." The basic economic maladjustments are such that a readjustment would come even though each of us kept his mind completely closed to the possibility. Indeed, if there is any free enterprise answer to the boom-bust problem, it is likely to lie in the direction of more widespread discussion of the probabilities. The resulting preparedness for change would, if sufficiently general, be a major moderating influence.)

Chief among the *unfavorable factors* is the greatly diminished flexibility of the major cost factor — wages. It will prove extremely difficult (barring a very long depression or legislation which emasculates the labor movement) to achieve a reduction in the hourly wage in many industries. Thus, labor cost is likely to drop only as fast as productivity increases.

Do not underestimate the implications. Such industries may require a considerable period of time before their costs can be

(Continued on page 27)

	Estima	ated Nu	mber of	Employee	s in No	n-Agric	ultural E	stablish	nenis-	In Thou	ands—S	ource: 1	J. S. Ba	reau of	Labor Sta	stistics		
	MONT	ANA	IDA	но	WYOR	MING	COLO	RADO		MEXICO	AR	ZONA	U	TAH	NE	ADA		L MTN.
	1945	1946	1945	1946	1945	1946	1945	1946	1945	1946	1945	1946	1945	1946	1945	1946		1946
October	14,200	17,700	17,200	19,800	6,100	6,400	52,100	57,100	8,400	10,300	12,300	11.900	19,900	26,740	2,600	3,100	132,800	153,910
November	14,000	17,700	17.500	21.700	6.400	7.060	52,900	58,700	8,500	10,200	12,400	12,500	13,600	26,220	2,800		128,100	157,550
December	13,800	17,600	16,200	20,700	5,700	6,700	51,400	56,200	8,500	10,200	11,200	14,300	28,500	26,850	2,700	3,400	138,000	155,950
	1946	1947	1946	1947	1946	1947	1946	1947	1946	1947	1946	1947	1946	1947	1946	1947	1946	1947
January 1947	12.800	16,600	15,900	17,900	5.200	5.800	47,600	56,000	8,400	10,000	10,500	13,700	15,200	22,690	2,800	3,500	118,400	146,190
February	12,900	16,400	15,400	17.800	5.200	5.800	43,300	53,500	8,700	9,900	10,800	13,400	17,900	22,380	2,800	3,500	120,500	142,880
March		16,300	15,600	18,300	5.300	5.800	48,400	53,300	9.000	10.000	10.800	13,300	18,100	23,050	3,300	3,500	124,000	143,550
April		*****				****					11,200	13,600	17,900	23,330	2,900	3,700		*****

MANUFACTURING EMPLOYMENT

	WASHI	NGTON	ORE	GON	CALIFO	RNIA	TOTAL	PACIFIC
	1945	1946	1945	1946	1945	1946	1945	1946
October	172,900	168,500	112,500	123,400	688,300	717,200	973,700	1,009,100
November	164,800	161.500	101,200	118,400	621,500	705,500	887,500	985,300
December	164,900	161,500	108,400	118,000	618,800	705,800	892,100	985,300
	1946	1947	1946	1947	1946	1947	1946	1947
January	168,200	162,200	108,000	116,100	622,600	696,900	898,800	975,200
February	162,600	162,600	106,000	115,200	602,500	693,700	871,100	971,500
March	155,400	159,700	106,900	114,400	611,400	691,600	873,700	965,700
April	161 000	162 900			651.400	699,000		

Ariz. 4.6	Colo. 4.1	idaho 1.0	Mont. 3.0	Nev. 1.2	N. Mex. 2.9	Utah 4.2	From Social Wyo.	Total Mtn. 21.3	156.2	Ore. 12.0	Wash. 35.1	Total Pacific 203.3 288.4
5.6 6.3 8.5	8.3	4.5	6.3	1.9	4.2 5.3 7.2	7.4	1.4 2.0	41.4 55.8	228.8 262.9	27.1 32.6	67.3 58.7	323.2 354.2
8.8 7.5 6.9	11.2 8.5	7.1 4.8	8.4 6.3	2.6 2.3	7.4 6.2 4.4	7.8 5.3	2.2 1.6	55.5 42.5 31.6	264.3 268.5 251.9	28.2 20.8 16.3	57.2 40.8 33.9	349.7 330.1 302.1
	4.6 5.6 6.3 8.5 8.8	4.6 4.1 5.6 7.0 6.3 8.3 8.5 10.3 8.8 11.2 7.5 8,5	4.6 4.1 1.0 5.6 7.0 2.3 6.3 8.3 4.5 8.5 10.3 7.5 8.8 11.2 7.1 7.5 8.5 4.8	Ariz. Colo. Idahe Mont. 4.6 4.1 1.0 3.0 5.6 7.0 2.3 4.9 6.3 8.3 4.5 6.3 8.5 10.3 7.5 7.5 8.8 11.2 7.1 8.4 7.5 8.6 6.3	Ariz. Colo. Idahe Mont. Her. 4.6 4.1 1.0 3.0 1.2 5.6 7.0 2.3 4.9 1.5 6.3 8.5 10.3 7.5 7.5 7.5 2.5 8.8 11.2 7.1 8.4 2.6 7.5 8.5 4.8 6.3 2.3	Ariz. Colo. Idahe Mont. Nev. N. Mez. 4.6 4.1 1.0 3.0 1.2 2.9 5.6 7.0 2.3 4.9 1.5 4.2 6.3 8.5 10.3 7.5 7.5 2.5 7.2 8.8 11.2 7.1 8.4 2.6 7.4 7.5 8.5 4.8 6.3 2.3 6.2	Ariz. Colo. Idaha Mont. New. N. Mez. Utah 4.6 4.1 1.0 3.0 1.2 2.9 4.2 5.6 7.0 2.3 4.9 1.5 4.2 5.4 6.3 8.5 10.3 7.5 7.5 2.5 7.2 9.3 8.8 11.2 7.1 8.4 2.6 7.4 7.8 7.5 8.5 4.8 6.3 2.3 6.2 5.3	Ariz.         Colo.         Idaha         Mont.         Ner.         N. Mez.         Utah         Wyo.           4.6         4.1         1.0         3.0         1.2         2.9         4.2         3           5.6         7.0         2.3         4.9         1.5         4.2         5.4         .8           6.3         8.3         4.5         6.3         1.9         5.3         7.4         1.4           8.5         10.3         7.5         7.5         2.5         7.2         9.3         2.0           8.8         11.2         7.1         8.4         2.6         7.4         7.8         2.2           7.5         8.5         4.8         6.3         2.3         6.2         5.3         1.6	Ariz. Colo. Idahe Mnnt. Nev. N. Mez. Utah Wyo. Tetal Mtn. 5.6 7.0 2.3 4.9 1.5 4.2 5.4 8 31.7 6.3 8.5 10.3 7.5 7.5 2.5 7.2 9.3 2.0 55.8 8.8 11.2 7.1 8.4 2.6 7.4 7.8 2.2 55.5 7.5 8.5 4.8 6.3 2.3 6.2 5.3 1.6 42.5	Ariz. Colo. Idahe Mont. Wer. N. Mez. Utah Wyo. Tetal Mtn. Calif. 4.6 4.1 1.0 3.0 1.2 2.9 4.2 3. 2.1.8 156.2 5.6 7.0 2.3 4.9 1.5 4.2 5.4 3 31.7 209.8 6.3 8.3 4.5 6.3 1.9 5.3 7.4 1.4 41.4 228.8 8.5 10.3 7.5 7.5 2.5 7.2 9.3 2.0 55.8 202.9 8.8 11.2 7.1 8.4 2.6 7.4 7.8 2.2 55.5 264.3 7.5 8.5 4.8 6.3 2.3 6.2 5.3 1.6 42.5 268.5	Ariz. Colo. Idishe Mnnt. New. N. Mez. Utah Wry. Tetal Mtn. Calif. Ore. 4.6 4.1 1.0 3.0 1.2 2.9 4.2 3.21.3 156.2 12.0 5.6 7.0 2.3 4.9 1.5 4.2 5.4 8. 31.7 209.8 19.0 6.3 8.3 4.5 6.3 1.9 5.3 7.4 1.4 41.4 228.8 27.1 8.5 10.3 7.5 7.5 2.5 7.2 9.3 2.0 55.8 262.9 32.6 8.8 11.2 7.1 8.4 2.6 7.4 7.8 2.2 55.5 264.3 28.2 8.8 11.2 7.1 8.4 2.6 7.4 7.8 2.2 55.5 264.3 28.2 7.5 8.5 4.8 6.3 2.3 6.2 5.3 1.6 42.5 268.5 20.8	Ariz. Colo. Idaha Mont, Ner. N. Mez. Utah Wyo. Tetal Min. Calif. Ore. Wash. 4.6 4.1 1.0 3.0 1.2 2.9 4.2 .3 21.3 156.2 12.0 35.1 5.6 7.0 2.3 4.9 1.5 4.2 5.4 8 31.7 209.8 19.0 59.6 6.3 8.3 4.5 6.3 1.9 5.3 7.4 1.4 41.4 228.8 27.1 67.3 8.5 10.3 7.5 7.5 2.5 7.2 9.3 2.0 55.8 262.9 32.6 58.7 8.8 11.2 7.1 8.4 2.6 7.4 7.8 2.2 55.5 264.3 28.2 57.2 7.5 8.5 4.8 6.3 2.3 6.2 5.3 1.6 42.5 268.5 268.8 20.8

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Kansas industry keeps step with agriculture. There are approximately 2,500 manufacturing and processing establishments. Over four million

tons of coal are mined annually. Here is the largest natural gas field in the world. Eighteen principal rivers with two great watersheds provide an abundance of water. The population is 97 per cent native born.

Kansas . . . the hub of a rich market; a treasure chest of natural resources with dependable labor; outstanding public health record; moderate living costs; and excellent transportation over Union Pacific rails.



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Union Pacific

\* Address Industrial Department, Union Pacific Railroad, Omaha 2, Nebraska, for information regarding industrial sites.

THE STRATEGIC MIDDLE ROUTE

### THE WESTERN OUTLOOK...News...Statistics...



### EMPLOYMENT

(Continued from page 25)

adjusted to the revised (lower) price structure. And until their costs and prices are brought down to that level, their production (and employment) must be on a severely curtailed basis.

Thus, to the extent that full recovery depends on substantial increases in production per wage dollar, the recession may be of greater duration than is commonly estimated.

Best guess at this distance: A reasonably short (six - 12 months) recession followed by a recovery that stops noticeably short of full employment of workers, capital and resources.

#### Commerce-Banking

Pacific Northwest carloadings for the first four months of 1947 are a bright spot, 415,239 cars, largest total since same period in 1942, when the movement was only 3,449 cars greater. Fruit movement even exceeded 1942. Forest products topped the commodity list with 134,709 cars, compared with 102,300 to same date last year. Export freight from Pacific Coast ports for April was up 27% over last year.

Department of Commerce says sales of 294

Department of Commerce says sales of 294 Pacific Coast wholesale houses in April ran 21% above corresponding month in 1946, as against 24% for the nation. Pacific Coast inventories climbed 74%, national 68%. Electrical goods outran the list, with 149% gain. Meats up 55%, lumber and building materials 46%, hardware

36%, industrial supplies 30%. Drug sales down 1%, groceries 5%, jewelry 10%. California retailers did 11% more business in April this year than last.

#### Chemicals

Demand for fertilizer for both export and domestic purposes continues to grow. Department of the Interior has set up a unified program among its various agencies to encourage further development of a Western phosphate fertilizer industry, working through the department's Pacific Northwest Coordination Committee. Roscoe E. Bell, a Bonneville industrial analyst, has been detailed to assist.

Representatives of W. R. Grace & Co., steamship operators and exporters, recently inspected the war-built magnesium plant at Spokane and also visited Utah and other Western areas, in search of phosphate facilities. J. R. Simplot has announced plans for a \$5,000,000 high concentrate phosphate fertilizer project in southeastern Idaho, and Salt Lake people hope he and Sterling Chemicals of N. Y. will bid again on the Kalunite plant in that city, an abandoned alumina-from-clay establishment. A Nevada mining firm was the high bidder, but War Assets Administration rejected its offer for lack of financial guarantee. Phosphate output in California has been increased by appearance on the market of Permanente Metals Corporation's "Thermo-Phos" produced by the electric furnace method.

Western farmers have gone hog-wild over hexaethyl tetraphosphate, because of its remarkable success in destroying aphis, but the Western supply is only 40,000 lbs., against a demand of 400,000 lbs. Eston Chemicals, Inc. of Los Angeles, Victor Chemical Co. in Chicago and Monsanto and Planetary in St. Louis are the producers. Phosphorus is the source of this new product, which appears this year for the first time. It is one of the spoils of war, a formula from a seized German patent. A weed killer, 2-3-dichlorophenoxy acetic, is also in short supply, and phosphoric acid for agriculture is expected to be short the rest of this year.

Biggest aerial spraying job in history was the use in May of 40 railroad tank cars of DDT solution by 14 planes for combatting tussock moth in 350,000 acres of timber land in northern Idaho.

First shipment of industrial alcohol manufactured from wood waste by the Willamette Valley Wood Chemical Co. at Eugene, Ore., was made to Chicago on May 28. Sawdust and hog fuel have been converted into 8,000 gal. of 190-proof ethly alcohol by the plant, built at a cost of about \$3,000,000 and placed in operation about two months ago.

### **Apparel**

It is a generally accepted fact in the Pacific Coast apparel industry that the honeymoon is over, so the March declines in cuttings shown by government statistics is viewed as just part of the inevitable readjustment in prices. This is the first year since 1941 that there has been a seasonal slump in low price dresses. Demand for good quality low price dresses. Demand for good quality low price house dresses has been holding up the best of any items, but even here it has been sagging because prices went out of line in the war period. Men's work clothing, on the other hand, has shown slight increases, due to the fact that employment generally has been good.

### FREIGHT

Cars of revenue freight, railroad carriers in 11 Western states.

(Computa fro	m Assn.	oj Am. K.	Receive	
	Carlo	adings		onnections
	1945	1946	1945	1946
Norember	535,620	731,456	278,746	366,315
December	586,302	487,495	240,906	258,838
	1946	1947	1946	1947
January	468,913	508,343	240,907	260,660
February	467,054	489,366	243.725	263,027
March	589,337	665,079	320.827	360.213
April	447,932	522,144	237,236	279,392
* May	566,795	685,897	297,239	361,084
*5-week perio	d.	,	,	

### BANK DEPOSITS

(In millions of dollars-adjusted)

Daily average for month, all member banks in 12th Federal Res. Dist. Demand deposits excluding U. S. Gov't deposits, cash items in process of collection, and interbank deposits.

															Demand Deposits	Deposits
October	19	34	16	3											8,617	5,662
November						,			•						8,737	5,714
December															8,856	5,705
January	1	9	4	7											8,802	5,789
February															8,513	5,807
March . April															8,277 8,196	5,863 5,854

### BANK LOANS

Industrial, commercial and agricultural (In millions of dollars)

From weekly reporting member banks of Fed. Res. System in 7 Western cities: L. A., S.F., Portland, Seattle, Tacoma, Spokane, and Salt Lake.

	(Average of Wednesday reports)	
S	October 1946	987
2	November 1	074
4	December 1	106
5	January, 1947 1	,131
9	February 1	,164
7		189
3		198
4	May	,189

INDEX OF DEPARTMENT STORE SALES

Index numbers, 1935-39 daily average=100 with seasonal adjustment. Compiled by Federal Reserve Bank. Utah a Southern Eastern Washington Total 12th Western and n 1945 297 270 1946 279 1945 246 227 1946 241 1945 1945 1946 1945 1946 242 236 1946 230 287 299 1947 276 308 301 1946 301 347 366 209 229 258 261 241 310 306 305 364 1947 336 369 370 1947 272 1947 1946 1947 368 421 404 347 283 299 312 344 267 329 340 301 318 292 275 309 250 321 260

#### WHOLESALERS' SALES

In thousands of dollars. Percentage changes are from corresponding month of preceding year. From Bureau of the Census.

Industrial Supplies

1.962

436 717

2,188

Change

 $^{+45}_{+12}_{+22}$ 

	Automotive Supplies	Change	Electrical Goods	Change	Furn. and house furn.	Change	foods exc. farm prod.	Changa	General Hardware	Change
Nor. Dec. Jan. '47 Feb. Mar. Apr.	3,135 2,962 2,795 3,005 2,964 3,193	+33 +26 +18 +23 +19 +18	9,691 11,742 8,027 9,029 9,877 10,077	+130 +137 + 84 +121 +128 +149	2,262 2,426 2,675 1,652 1,430 1,635	+ 3 + 53 + 76 + 33 + 9 + 1	10,065 11,445 10,751 10,050 11,886 11,775	+17 $+23$ $+6$ $+4$ $+9$ $-5$	5,353 3,858 4,547 4,238 6,265 6,955	+49 +71 +33 +44 +47 +36
				1	MOUNTAIN					
Nov. Due. Jan. '4 Pub. Mar. Apr.	788 874 7 876 782 860 720	+25 +60 +45 +20 +35 +28	1,999 3,275 1,616 2,265 2,577 2,910	+105 +119 + 22 +114 +125 +147	382	+ 90	4,984 2,474 3,086 2,272 3,862 2,743	+23 +30 +30 +14 +10 +11	1,674 1,649 1,038 1,269 1,934 2,033	+54 +72 +39 +40 +65 +41

He: "My girl thinks I am quite a wit."
She: "Well, she's half right."

and supplies

549

922

Lumber & bidg. mat. Change

1.215

1,485 750 1,590 1,604 +100 +122 + 93 + 96

- 93 623 - 96 674 - 64 1,060 - 46 994

947

+66

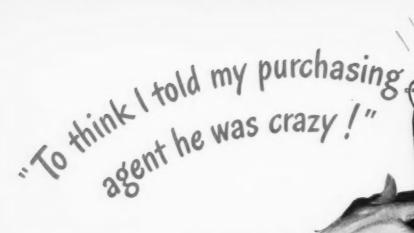
+30

Matais

766 625

673

+49 +31 +28 +57 +25 +15





"My face still gets red when I think about it. But I was irritable because I couldn't see how we were going to get that big new warehouse we needed in such a hurry. And when the p.a. suggested a Quonset, I blew my top.



"'You're crazy,' I yelled. 'Now don't tell me that Quonsets are swell—go up fast, don't cost much, won't sag or warp and all the rest of it. I know that. But get it through your head that what we need now is a big building.'



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"Well, the p.a. said he was talking about the Quonset Multiple, and showed me how it could be as long and as wide as I wanted. It was all news to me, and good news, for now our Multiple is in use, and everything's swell."

Quoteset Multiple

GREAT GUY

GREAT BOSS

THE QUONSET MULTIPLE—as long as you like, in 20' extensions—as wide as you like, in 20'6" extensions. Sliding doors, ventilating louvers and windows available as you require them. And, of course, the Multiple has all the construction advantages of other famous Quonsets—nailable Stran-Steel framing, fire-resistance, ease and speed of erection, economy and permanency.

### **GREAT LAKES STEEL CORPORATION**

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UNIT OF NATIONAL STEEL CORPORATION

"The old boy gets a little excited now and then, but he'll admit it when he's wrong. Ever since I put him wise to the Quonset Multiple, I've been the fair-haired boy around here... and, believe me, it pays to be that! If your boss is like mine, I'd advise you to look into Quonsets for your own building needs. Just see your local Quonset dealer or write direct."



### THE WESTERN OUTLOOK...News...Statistics...



### **Power and Fuels**

Approaching signs of electric power company troubles are estimates from the Pacific Northwest that up to the first of June less than half the estimated oil fuel needs for supplementing hydro with steam for the rest of the season are available. Maximum operation of steam generating plants for the year beginning July 1, under average water conditions at hydroelectric stations will require 2,700,000 barrels of fuel oil, it is estimated, and 4,000,000 barrels if water conditions become critical. Central Arizona Light & Power Co. in Phoenix has been unable to renew its oil contract and has turned to coal for fuel.

California oil production is still going up, reaching 919,200 barrels daily for the week ending May 24, an all-time high. Total new wells this year up to the end of May were 830 as against 782 for last year to same date. Reports of a possible new oil pipe line from the mid-continent area to southern California betoken some future relief to the growing oil

Coal production still has not shown the usual seasonal decline, and probably will not this summer unless labor difficulties arise. Heavy export demand is the chief reason. Export shipments to the Orient-Southwest Pacific area for March were 18,854 tons, for April 37,700.

#### Metals

Signs of softening in bars and shapes in the Pacific Coast steel market have begun to appear, indicating that the situation may be easier in a few months as far as this type of steel is concerned. Supply of plates is as short as ever, with not much hope of relief before 1949, if the automobile makers fulfill their plans to run at full capacity in 1948. Plates are expected to be the last item in the entire steel list to come into supply. Expansion of eastern plate facilities is not coming along as fast as originally hoped.

One or two eastern steel firms who had withdrawn from the Coast as far as pipe sales are concerned are reported to be coming back, but the real relief in pipe is expected when the Kaiser pipe mill at Fontana gets into full production early next year.

Decline in eastern scrap prices has not yet affected the Pacific Coast market, although it may do so in a couple of months more. Western supply is still far short of demand. The only ship breaking operations of importance at pres-

#### ELECTRIC ENERGY

	(Production for	Public Us	e-In thous	ands of kilo	watt bours.	Source: F	ederal Pow	er Commiss	ion)
		Mou	ntain	Pacific Nort	thwest	Calif	fornia	Total P	acific
		1945	1944	1945	1946	1945	1946	1945	1946
Sept.	***********	958,475	924,\$89	692,146	1,109,086	1,852,794	1,547,003	2,344,940	2,656,089
			992,528	1,024,917	1,121,333	1,263,068	1,523,254	2,287,985	2,774,597
Nov.		862,427	937,678	1,003,510	1,302,623	985,017	1,443,167	1,988,607	2,745,790
Dec.			1,002,170	1,020,513	1,413,478	1,026,147	1,490,316	2,046,660	2,903,794
-		1946	1947	1946	1947	1948	1947	1946	1947
			1,061,564	1,049,322	1,477,873	1,032,828	1,466,716	2,082,150	2,944,589
Feb.		948,496	962,756	968,484	1,328,994	1,096,306	1,301,334	2,064,790	2,630,328
Mare	h	976,658	1,041,287	1,036,585	1,454,305	1,333,305	1,531,005	2,369,890	2,985,310

#### PETROLEUM

(California, Oregon, Washington, Arizona, Nevada)
(From Bureau of Mines)

TOTAL DELIVERIES
(Thousands of barrels daily)

	CRUDE PRODUCTION (Barrels, daily avg.)	GASO	LINE	GAS & DI	OIL	HEA		ALL PR	ODUCTS
	1946	1945	1946	1945	1946	1945	1948	1945	1946
September	866,684	363	318	76	77	400	339	954	860
October	865,701	269	320	76	100	443	326	897	879
November	870,510	271	293	106	128	418	363	901	896
December	879,251	265	308	117	146	479	416	969	993
	1947	1946	1947	1946	1947	1946	1947	1946	1947
January	884,149	248	313	139	177	432	420	917	1,035
February	900.825	283	320	129	142	439	425	947	1,012
March	903,899	300	304	106	117	448	390	962	932
April	906,317	274	336	101	125	376	385	851	988

| Column | C

ent are those of Kaiser at Richmond Yard 4, where from four to six ships a month are being broken up. One expected source of supply is

(In thousands of tons. From Bureau of Mines)

1,943 tons this year of 1946.

Non-ferrous meta

in Davy Jones locker, the battleship Oklahoma, purchased by Moore Drydock in Oakland, but sunk en route from Honolulu.

A northern California steel, foundry and scrap industries committee has been formed for expediting scrap. It is composed of H. W. Christenson (chairman), purchasing agent, Columbia Steel Company; R. E. Kroeck, purchasing agent, Enterprise Engine and Foundry Company; Marshall Shapiro, president, California Metals Company; E. W. Thomas, manager of purchasing, Bethlehem-Pacific Steel Corporation, and Harry Dull, manager, Moore Machinery Company.

Can manufacturing showed a tidy increase for first quarter of 1947, Pacific Coast states and Hawaii consumed 60,492 tons of steel for this purpose, compared with 47,592 tons in the same period last year. Mountain area was down, 1,943 tons this year, 3,045 tons in first quarter of 1946.

Non-ferrous metal production is holding up well to the relatively high peacetime level reached in March. Copper output has been consistently but slowly rising but lead and zinc have shown some unevenness, due principally to manpower problems. Utah operators, for example, are having trouble replacing the workers who are returning to the farms for the summer.

June and early July were considered likely to be an uncertain period because of the fact that wage contracts are in process of negotiation. In Utah and Nevada the contracts are reopenable this year only on wage scales.

Production of pig aluminum at Reynolds' Longview plant was first reduced a third by the shutdown of one potline several weeks back and complete closure followed early in June. The cut in production was attributed to a sudden break in the pig aluminum market and dumping of government-owned surplus on the open market.

Alcoa and Permanente are both continuing production, and have denied any plans for a reduction of capacity. Both the Vancouver and Spokane plants are operating five potlines, with one potline at Spokane that has not been placed in production since Permanente took over the plant.

However, the start of production at the Tacoma reduction plant has again been delayed by Permanente. Opening of the former Olin plant is awaiting outcome of a survey of the pig and ingot market, as well as an adequate supply of aluminum which is still subject to a shortage of soda ash. Apparently the output of the Tacoma plant will go into the pig market, as well as supplementing the Mead plant in supplying the Trentwood rolling mill.

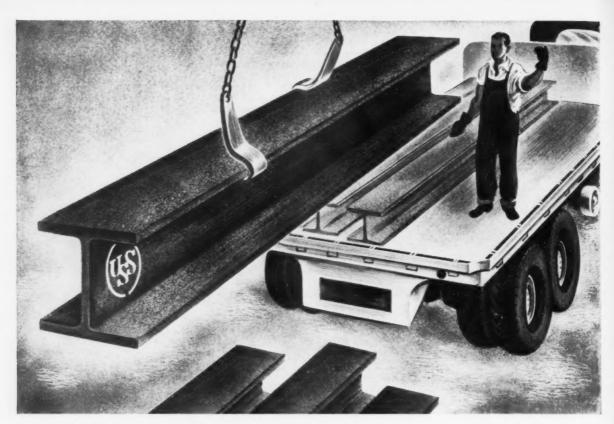
The Trentwood aluminum rolling mill, which has been operating at near capacity since being taken over last year by Permanente Metals Corp., was shut down the last week in May for inventory purposes.

	Western Ar	N AND ST	Inited State		Alloy Steel	Output	Carbon Ingel
From Ame	Pigiron Output	Percent of Capacity	nstitute (in Steel Output	Percent of Capacity	September	4,899 7,892	2,691 10,018
October November	109,809	45.6 54.8	271,889 262,913	65.4 65.3	November	7,529 4,355	6,861 13,675
December Jan. 1947	149,589 169,306	62.2 79.0	294,019 346,524	70.9 84.3	January 1947	4,387	11,276 7,936
February March April	166,209 196,356 177,849	87.2 91.6 86.4	321,192 375,727 337,054	86.5 91.4 84.6	MarchApril*Included in total steel.	4,405 5,403	10,718 8,857

~			(5	bort ton	. From	U. S. B.	reau of	Mines)					
		ONA	UT	АН	MONT	ANA	NEW M	EXICO	NEV	ADA	WEST'N STATES		
	1945	1946	1945	1946	1945	1946	1945	1946	1945	1946	1945	1946	
Beptomber October	21,250	28,650	19,177	17,400	4,061	4,700		4,085		3,400	54,233	59,031	
November December	23,000 23,000	30,650 28,300 30,300	17,900 16,000 15,300	17,700 17,425 17,800	7,100 6,600 5,455	4,800 4,800 4,850	:	4,195 4,000 4,100	:	3,600 4,200 4,400	38, <b>015</b> 55,539 53,964	61,770 59,498 62,245	
January February March†	1946 25,300 24,300 22,300	1947 30,700 29,450 32,000	1946 11,000 500 650	1947 22,550 21,800 24,250	1946 6,050 5,400 5,300	1947 5,350 5,050 5,550	1946	1947 4,614 4,732 4,840	1946	1947 3,800 4,000 4,100	1946 52,046 38,822 38,075	1947 67,383 65,383 71,112	
†Prei	luded in s	otal.		,	-,	-,							

COPPER

947



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United States Steel Export Company, New York

## UNITED STATES STEEL

### THE WESTERN OUTLOOK...News...Statistics...



#### Lumber

Unseasonable, early drouth of three weeks in May shut down many logging operations in the Northwest. Production probably did not suffer, but a long dry summer may result in excessive fire losses as well as slowing production down below normal. Sawmill stocks show that lumber is being absorbed as fast as produced.

Bidding for national forest timber is rapidly Bidding for national forest timber is rapidly becoming less spirited. At a mid-May sale the Oregon-California Land Administration was able to sell only 25 of 46 parcels offered. Single bids were offered on 23 of the parcels and competing bids on only two. The differential between appraisal and bid prices has decreased materially, and in some cases timber is being sold at the appraisal value.

Basic timber products such as lumber, pulp, and plywood will be augmented and perhaps supplanted to a degree by new products from growth now poorly utilized or wasted. Such is the prediction from the 1946 financial report of the Weyerhaeuser Timber Co. for the future trend of the lumber industry.

Pine orders are up 17 per cent above 1946 for the first five months of the year. Production is ahead 18 per cent. Anticipating lighter fruit and vegetable crops and market declines, shook producers in California are trimming their output.

### LUMBER

(In thousands of board feet) From West Coast Lumbermen's Association (Douglas Fir, Sitka Spruce, Port Orford Cedar, West Coast Hemlock, Western Red Cedar):

Year through May	1945 3,114,355	1946	1947
Production	3,114,333	2,611,583	2,902,401
	ern Pine Ass Ponderosa, Su		
Year through April Production		1946 . 607,042	1947 782,432

#### SOFT PLYWOOD

From Bureau of the Census (In thousands of square feet)

Beptember	1946 126,974
October 67,014	149,600
November	129,635
December 75,100	121,816
January 106.883	140,058
Pebruary	129,622
March 109,005	139,779
April 120 152	148 027

### PULPWOOD (Pacific Northwest)

(Cords of 128 cu. ft., roughwood basis.

				4	•		•		•	_	•	•	-	_	υ,	Receipts	Consumption
	Beptember															520,240	228,672
B	October .															476,936	253,050
	November															308.595	246,701
	December .	*														284,804	228,317
	January 19	4	7													305,850	263,493
	February .															319,800	243,794
	March															365,874	271.419
	April															397,999	266,615

### **Building Materials**

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1947

Construction costs have reached their peak and are becoming stabilized, was the conclusion reached by contractors attending the spring directors' meeting of the Associated General Contractors of America in Seattle in May. They agreed that there will be no quick or drastic reductions in construction costs, and that the new normal costs will be substantially above prewar costs. Some hope was held out that gradual increases in efficiency and economy can be brought about in construction.

An unusual labor agreement was reached recently at Ellensburg, Wash., when building contractors and carpenters agreed on terms to settle a wage dispute that included a cut in the profit made by the contractors. Carpenters agreed to accept a wage scale of \$1.75 pr hour in place of the \$1.80 asked, with time and a half instead of double time on Saturdays. Contractors agreed to reduce their profit figure on cost-plus contracts by 5 per cent, and building materials dealers agreed to reduce the price of building materials by 3 per cent.

Reopening of the United Building Materials plant at Richmond, Calif., after about six months of shut-down due to a strike is expected to relieve the pressed brick shortage in the central California area. This shut-down resulted in brick being shipped in from Seattle, Portland and

Cement production is about keeping even with demand. California mills produced 5,317,-000 barrels of finished cement in the first quarter of this year, compared with 4,143,000 in the same period of 1946. In the Pacific Northwest first quarter production this year was 1,051,000, in 1946 772,000. Southern California prices began to go up the first of June, Monolith leading the way with 20c a barrel advance, due to definitely ascertained higher costs of 18.6c, with wages of its supplying firms due to advance also.

#### STRUCTURAL CLAY PRODUCTS

	UNGLA BRI (in thous standard	CK sands of brick)		TURAL LE tons)	VITRIFIED CLAY SEWER PIPE (short tons)		
	Mountain	Pacific	Mountain	Pacific	Mountain	Pacific	
Sept.	13.508	22,080	2,397	4.315	1.604	10.599	
Oct.	11,672	21,742		3,770	1,652	10,698	
Nov.	11,728	18,929	2,683	3,014	1,496	10,753	
Dec.	9,546	13,875	1,423	3,275	1,800	11,832	
Jan.	8,955	11,782	2.120	4.049	2,347	11.130	
Feb.	9,334	14,038	1.853	4,205	2,183	9.776	
Mar.	10,825	12,694	2,352	3,156	2,153	12,611	

#### ASPHALT ROOFING

(AI	riz.,	Calif.,	Idaho, Nev., Ore	e., Utah, Wash.)	
			ASPHALT	SATURATED	
		(		(Tons of 2000	lbs.)
Sept. 1946			657,881	5,087	
October			778,434	5,524	
November .			707,262	5,131	
December .			787,815	4,768	
January '4	7		759,807	4,695	
February .			727,533	4,271	
March			761,481	5,426	

### CEMENT

(In thousands of bbls.; from U. S. Bureau of Mines) Colo.-Wyom.

	—Calif	fernia—	Oregon -	- Wash.	Mont. Utah - Idaho			
	1945	1946	1945	1946	1945	1946		
Bept. Oct. Nor. Dec.	1,364 1,421 1,211 1,174	1,683 1,829 1,793 1,757	305 315 299 286	530 490 354 376	296 295 333 320	395 409 349 374		
Jan. Feb. Mar.	1946 1,159 1,355 1,629	1947 1,797 1,613 1,907	1946 234 250 298	1947 295 296 460	1946 233 109 245	1947 318 297 332		

#### WHEAT FLOUR

(In thousands of sacks; from Bureau of the Census)										
December 1946 January Pebruary March	OreWash. 1,865 2,033	Montana 357 385 329 397	Utah-Idaho 515 532 506 539	Celorade 444 481 455 495	California 396 452 409 463	Total 3,883 3,402 3,364 3,688				

### **Food Products**

Fruit canning prospects now hang on the prices to be paid growers by the packers, with the former inclined to the high, wide and handsome attitude and the latter playing their cards close against their vests in view of the uncertainty of the marketing situation. History says more shirts have been lost on apricots than in laundries. California apricot growers started out with well-publicized ideas of \$110 a ton, while some responsible packers feel that raw material cannot cost over \$40 a ton if a 5,000,000-case pack is to be moved this year. Early crop estimates were 170,000 tons. Last year there were 306,000 tons and 10,225,000 cases packed—an all-time high; in 1945, 324,000 tons and almost 4,000,000 cases. Apparently there will be fewer apricots frozen and more dried this year. Growers have been hoping for a \$75 a ton price on cling peaches, as against \$63.50 last year, but it may end up at \$55.

Asparagus canning season has ended with a pack that may be only 1,800,000 cases, as against pre-season estimates of 2,300,000 cases. Many packers did not finish out the season. Frozen asparagus is almost out this year. The pea crop east of the Cascade Mountains in the Pacific Northwest will be somewhat reduced by unseasonable, dry weather, while berry crops also have suffered. Pea canning and freezing began a week earlier than usual.

Citrus juice packs in southern California and Arizona for 1946 were higher than in 1945, according to recently published statistics. Orange juice was 3,258,000 cases, as against 2,008,285 cases, grapefruit juice 1,216,256 cases compared with 1,099,142, lemon juice 1,009,727 cases as against 414,404.

Hawaiian sugar crop, estimated last month at 800,000 tons, is now believed to be more likely near 850,000 tons. Some of the islands have had beneficial rains, others not, and sugar planters and processors hope that the threatening pineapple industry strike will pass them by. Beet sugar crops seem to be uniformly good throughout the West, in contrast to some unfavorable reports from elsewhere in the country. The rise of Imperial Valley in California as a producing area is shown by the fact that this year's crop, largely going to the Holly and Union sugar companies, is 22,000 acres, or about 400,000 tons of beets. Seven years ago production was neg-

Flour milling situation is much the same as last month, with domestic buyers holding off awaiting new prices. A wide spread of prices on new crop wheat from Texas has led bakers and others to expect lower prices from other areas. The wheat crop in eastern Oregon and Washington will be about 70 per cent of normal, because of the three-week drouth in May. Further damage to crop was caused by an attack of Mormon crickets in Umatilla County, Oregon.

Army and navy buying has stepped up meat processing activities, necessitating overtime in the San Francisco region plants, as the two services are buying ahead, having reached the end of their fiscal year. Meat supplies in the California area have been good, and conditions have improved in Utah and the Pacific Northwest. Fats are short, on account of heavy export demand, although bakers' needs have been met. Cow hides are selling cheap, but calfskin prices are higher, apparently due in part to a higher demand for leather for coats.

Cotton seed crushed in California mills for the nine months ending April 30 totaled 23,-700 tons. In the same period last year, 12,348 tons were crushed.



# West Coast



Ryerson Steel-Service is in Los Angeles. Steel users of West Coast industry are already contacting the big new Ryerson Plant for quick shipment of steel from stock.

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# Spolligities on the NEWS

WESTERN INDUSTRY FOR JULY, 1947

**VOLUME XII** 

NUMBER 7



ICC's recent order, upheld by the U.S. Supreme Court, giving the South and Middle West lower freight rates because of economic condi-

tions in the territory served, rather than upon the earnings of the carriers performing the service, may have an effect upon the public and private utilities of the West.

As interpreted in Washington, similar rulings may be made by ICC and other agencies, such as Bonneville and Boulder Dam. It is expected that some of the Western states may join in the appeal to the court by Eastern states for reconsideration.

The ruling itself does not affect rates west of the Rockies, but lowered them 10 per cent in the South and Middle West, and raised them correspondingly in the northeastern territory. Curiously enough, the northeastern railroads had not asked for the raise, and considered themselves adequately compensated under the old rates.

Thus northeastern shippers will pay an estimated \$50,000,000 annually to compensate the industrial South and Middle West for the social objective of giving the people in the latter areas an economic advantage. Lawyers in government say there apparently is no specific authorization in federal statutes for this latest ICC ruling.

### Red Tape Snipped Off

Decentralization of government functions already promises unbelievable savings in red tape delays, according to Marion Clawson, regional director for California and Nevada of the Department of the Interior's Bureau of Land Management.

An application to purchase federal grazing land, when cleared through Washington under the old system, usually took three years to complete. After first submitting to the regional office it went to Washington, then back to the regional office for a field investigation, once more to Washington for a decision to offer the land at

public sale, then out again to the district land office for the sale actually to be made.

Now the Bureau proposes to do the whole job in the region and get it down to six months. The new regional offices in the West are at San Francisco, Portland, Billings, Salt Lake and Albuquerque.

### Possibilities in Barter

Perhaps we can barter our way through some of the iron curtains. The I. H. New Company, Los Angeles exporters with substantial interests in Korea, are trying it.

Since dollar exchange cannot be obtained in Korea under military government, Army permission was obtained to land at Seattle a \$120,000 cargo of cod liver oil, hog bristles, fish creels and other Korean products.

As fast as they were sold, Dr. New began spending the proceeds for an assortment of pharmaceuticals, printing inks, tires, auto and truck repair parts, rice hulling equipment and other capital goods needed in Korea. These were picked up at Los Angeles in mid-June by an American President liner.

Under present conditions of short domestic supply, many such deals might be promoted. Some prewar exchanges of Pacific Northwest dried apples for German nails and other items were not so happy; the imports could not be fed into the domestic system of distribution easily.

### Manufactures Rising

Another sign of Pacific Northwest industrialization is the break-down of rail freight tonnage. With Northern Pacific, for example, the "manufactures" classification accounted for 23.2% of total tonnage last year, as against 25.4% for forest products. Back in 1926 forest products were 38.4% of the total, and manufacturers only 12.9%. N. P. ton-miles have more than doubled

since 1939, while Great Northern and the Milwaukee have done nearly as well.

### The state of the s

We Don't Know Either

Among other aircraft industry financial troubles now being aired at Washington is the ignorance that sample military planes must be ordered in big enough quantities to work out the tooling problems if they are to be available in a hurry when needed. But while industry leaders have been crying their eyes out back there, automobile procurement men on the Pacific Coast have been wondering why these aircrafters seem to pay no attention to the opportunity of making automobile bodies as one means of keeping themselves in hamburgers.

### Research Goes Ahead

Although the West has been slow in realizing the value of research, both market and technological, it is now beginning to pick up some lost time.

Latest development is a market study for the Pacific Northwest lumber industry by Dr. Nathanael H. Engle, director of the University of Washington bureau of business research, correctly forecast a postwar shortage of aluminum facilities instead of a surplus.

The study will cover plastics, processed panels and all available substitutes, to determine just how extensively they will cut into the future lumber market. Competitive trends may be mapped.

An example of how dearly failure to do research may be paid for is the coal industry, now badly worried over the encroachment of the diesel engine into its single largest market, the railroad locomotive, and desperately endeavoring to produce in a hurry a gas-turbine locomotive to offset the diesel that took 15 years to perfect. Just a few years back a proposal that Utah coal operators assess themselves one cent a ton for research was laughed at.



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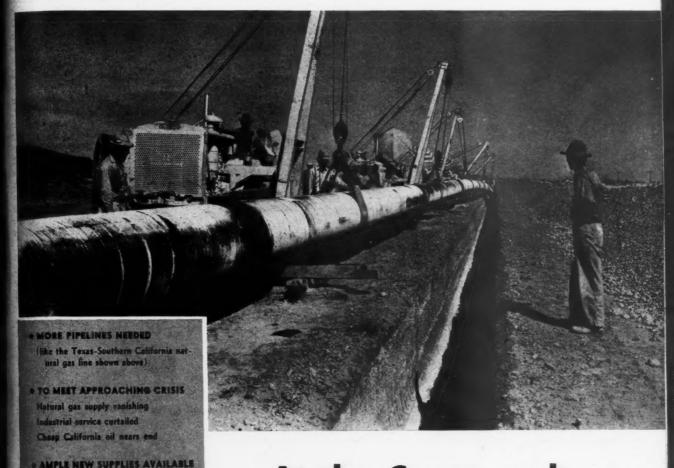
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# At the Crossroads On Fuel Supply

ITHOUT new supplies, the Pacific Coast and Arizona and Nevada as well are heading for an industrial fuel famine. But if possible additional Western sources are utilized, the whole West is on the threshold of tremendous developments in fuel supply that will permit future industrial growth to continue uninterrupted.

Oil and gas piped from mid-continent Rocky Mountain coal gasified at mines Coal stockpiled on Pacific Coast for gasi-

On the dark side, it is a picture of natural gas in California nearing an end in 25 years or less, with industrial service already being sharply curtailed, of the new natural gas pipeline from Texas insufficient to meet the growing population demand, of California having a diminishing aupply of its cheaply-sold petroleum and beginning to import oil at much higher

prices as early as 1951, a situation that would correspondingly affect Arizona, Nevada and the Pacific Northwest, which have been dependent upon California for oil.

Yet it was similar situations to this that gave rise to Boulder Dam, the Los Angeles Metropolitan Aqueduct, the Central Valley Project, Bonneville and Grand Coulee.

The future possibilities (not including the partly completed gas line from Texas) include an oil pipeline from Texas to southern California (already planned), an additional natural gas line from Texas to serve northern California, other pipelines from the Rangely field in Colorado and the Cut Bank field in Montana, the stockpiling of Rocky Mountain coal on the Pa-

cific Coast for conversion to gas, the gasification of coal at the mines for piping to the Coast, and the utilization of oil bearing shales.

Economic feasibility of all these remain to be determined, except that a group of oil companies are already sufficiently convinced to combine planning for the oil pipeline from Texas. Atomic power might of course revolutionize the whole situation, but Bruce R. Prentice, G-E's No. 2 man at the Hanford Engineer Works, predicts the changes it works will be very gradual.

On the shortage side, here is what industry faces:

1. The postwar population is so much greater than expected, boosting household and commercial demand to undreamed of heights, that industrial consumption of natural gas in California is being greatly curtailed.

2. Even the natural gas pipeline from western Texas to southern California, now under construction, will probably only provide temporary relief, in view of the continuing Western growth of population.

3. Great doubt exists as to whether the Texas fields can be tapped for much more natural gas. "Too many straws already in the pool," said one gas engineer.

4. Increasing use of natural gas for repressuring the oil fields, to conserve the oil supply, diminishes the amount of gas available for other purposes.

5. California's natural gas supply is only estimated to be good for another 15 to 25 years, and even then only by continuing to curtail industrial consumption.

6. Industry cannot reconvert to oil without great increase in cost, because California's supply of cheap oil is being drained off by tankers coming here to take advantage of lower prices than can be obtained anywhere else. Consequently, by 1951 California probably will have to begin importing oil in large quantities at higher prices.

7. The Pacific Northwest already has in sight less than half the fuel oil required for the next year to operate its steamelectric power plants, which are needed to supplement the shortage of hydro power.

8. Effect on other states is indicated in the fact that Central Arizona Light & Power Company of Phoenix has been unable to renew its oil contract and has had to substitute coal.

9. Expanding use of "intermediates" has reduced the amount of residual or heavy fuel available, and it is not economical for refineries to run crude oil to produce heavy fuel oil. Intermediates include stove oil and furnace oil for domestic heating, diesel fuel for internal combustion engines, tractors, trucks, motor vessels, diesel electric locomotives, orchard heating, weed killing, mosquito abatement. Intermediates are also used for catalytic cracking stocks to produce gasoline and other high value material.

On the optimistic side, here are the chief possibilities, as at present visualized:

1. Mid-continent gas from western Texas will be flowing into Los Angeles late this fall, if on schedule. There will be an increasing rate of delivery up to a maximum of 305,000,000 cubic feet daily in 1951 and for the remaining 25 years of the contract.

2. Nearly one-third additional capacity from this new pipeline could be obtained by increasing the pressure, it is believed.

3. A group of Pacific Coast oil companies, headed by Shell, are considering a 20inch pipeline to bring 150,000 barrels of oil daily from Winkler County in western Texas, to Wilmington, California. Maximum carrying capacity of the line will be from 300,000 to 350,000 barrels a day, depending on the pressure and viscosity of the oil.

4. To supplement the new natural gas pipeline to southern California, another line from Texas to northern California, which could deliver gas at a price less than fuel oil, is urged by Roy A. Wehe, assistant director of the public utilities division of the California Public Utilities Commission. His suggestion has been endorsed by the California Manufacturers Association.

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5. Standard Oil of California and Utah Oil Refining Co. have each announced plans to build a 10-inch pipeline, capacity 25,000 barrels daily, from the Rangely oil field in Colorado to a point near Salt Lake City, 181 miles.

6. Oil or gas from Rangely and from the Cut Bank field in Montana could be piped to the Pacific Coast.

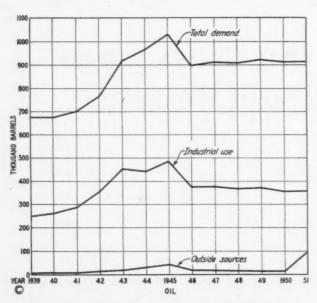
7. Stockpiling of coal from mines in the Rocky Mountain area on the Pacific Coast either to be distributed for use as coal, or to be converted into gas, is proposed by V. F. Parry, senior fuel technologist at the U. S. Bureau of Mines Field office at Golden, Colorado, who has spent 25 years in research on Western coal. Tests with 70,000 tons of coal by Great Western Sugar Co. at Brush, Colorado, over the last four years, have proved that coal can be stored eight months or more without loss by spontaneous ignition.

8. Germany ran its war machine on gasified coal, so gasification is physically possible. Coal reserves are sufficient to supply all needs for liquid hydrocarbons and coal

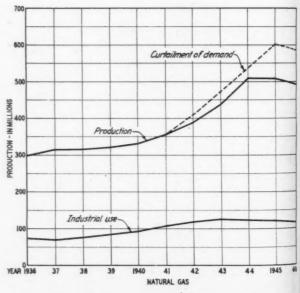
for about 1,000 years.

9. Known reserves of oil shales in Wyoming, Colorado and Utah are equivalent to 92,000,000,000 barrels of oil. The government oil shales experiment station at Rifle, Colorado, was put into operation in

To work out a natural gas conservation policy, hearings have been going on before



• PETROLEUM demand in five Westen states (Calif., Ore., Wash., Ariz., Nev.) now practically all supplied from California oil fields, will require big imports from other areas by 1951, it is predicted. Figures shown above are in thousands of barrels daily.



 NATURAL GAS reserves in California are considered good for 25 years more, but demand already has outrun supply owing to population growth, and industrial use already has been sharply curtailed. Even the new pipeline from Texas will only partially relieve the shortage. Figures above are in mil-

the California Public Utilities Commission since last fall. Figures showing the growing deficiency in supply, presented at the hearings by Mr. Wehe, are as follows:

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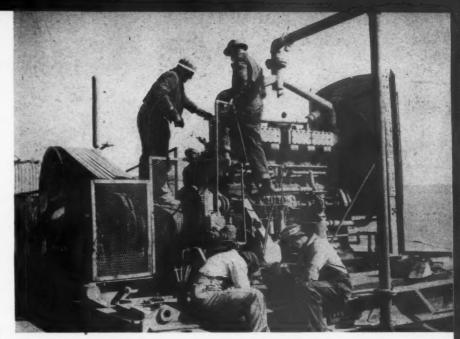
	- Millions of Cubic Feet of Gas per Day (Average)			
	1946 Actual	1950 Est.	1955 Est.	1960 Est.
Gas Load				
Firm Requirements	596	628	744	851
Requirements	409	573	703	838
Total Need	1005	1201	1447	1689
Availability of Gas: From presently known California sources— Oil-Well Gas:				
Regular Pressure Maintenance	520	430	245	170
Return		******	25	200
Subtotal	520	430	270	370
Dry Gas	414	335	255	210
Subtotal	934	765	525	580
Priom Estimated New Discoveries Out-of-State Gas		100 160	75 278	50 278
Total Gas Available	934	1025	878	908
Deficiency in Supply Com- pared with Total Need	71	176	569	781

The increasing effect of the use of gas for repressuring oil fields is shown by the fact that for the last seven years before the war, average daily use of gas for this purpose averaged only 12,400,000 cubic feet daily. In 1942 this usage edged up to 36,000,000, in 1943 it jumped to 137,000,000, in 1944 to 198,000,000 and in 1945 to 255,000,000. Repressuring makes available a far greater BTU equivalent in oil, while the gas itself remains in the reservoir and gradually becomes available for use. However, considerable gas is consumed for power purposes in forcing the gas back into the ground.

Integration of operations between the gas companies in southern and northern California would be called for under the conservation program. When the Texas pipeline is completed, southern California industrial consumers would get relief from the heavy curtailments imposed last winter, and the southern gas companies would also deliver gas to the northern companies.

This would lessen the drain on the Rio Vista field, northern California's principal supply, and a proposed curtailment to 20 per cent of the industrial demand in northern California would extend the life of the field nine years, or up to 1967. Most of this industrial gas is sold on a surplus or interruptible rate, considerably cheaper than the domestic and commercial rate which has first call on the supply, and six of Pacific Gas & Electric Company's largest customers account for approximately 28 per cent of this class of service. Southern California is estimated to have 10 per cent more reserve than the north.

Instead of the curtailment to 20 per cent of industrial demand, a more flexible system has been suggested by J. S. Moulton, executive engineer of P.G. & E., providing for maximum monthly limits of use as required, ranging, for example, from 5,000,000 feet to 50,000,000 feet. This would permit both the gas companies and customers to plan their curtailments a year in



• A gas well crew at work on one of Shell Oil Company's operations in California.

advance, subject to emergencies, and also permit suppliers of substitute fuels to figure ahead also.

If users of surplus or interruptible service change to a firm basis, their fuel costs would jump sharply, as shown by the following figures, in cents per thousand cubic feet, of the average revenue received by the gas companies in 1946:

 Class of Service
 North
 South
 State Avg.

 Firm
 44.53
 60.44
 53.16

 Surplus
 17.44
 17.00
 17.29

 Total, both classes
 33.17
 49.87
 41.21

During the latter part of the war 90 per cent of all surplus gas was sold at 17c or less, according to testimony in the conservation hearings, and over 65 per cent under 14c. In southern California, 25 per cent was sold between 10c and 11c, but there were no corresponding low prices in the north. Since then most of the industrial schedules have advanced approximately 10c due to escalator clauses in the price of oil. Texas gas delivered at Santa Fe Springs is expected to cost approximately 17.52c per Mcf. The average cost of all gas purchases from pipeline suppliers by California gas companies in 1946 was 18.34c.

How much more industrial users in California would have to pay for fuel if they changed to oil is shown in the following table of equivalent prices:

Northern	Calif	Oil, per barrel \$ .90	Gas (1050) btu in equivalent cents per Mcf 15.1
		1.15 1.30	19.3 21.8
Southern	Calif	.85	14.3
		1.10 1.25	·18.5 21.0

But, however greatly fuel costs may increase in the West, industry still has a wide margin over other areas, as shown in the following figures (varying slightly from the computations above) offered by R. L.

Minckler, vice-president of General Petroleum Corporation:

	Oil Price \$/Bbl.	Equiv. Gas Price \$/Mcf
Los Angeles	\$1.25	\$0.22
San Francisco	1.30	.23
Seattle	1.50	.26
Beaumont, Texas	1.53	.27
Maracaibo, Venezuela	1.46	.26
Tampico, Mexico	1.48	.26
Aruba and Curacao,		
N. W. I	1.53	.27
Bahrein	1.32	.23
Panama Canal		
(Atlantic side)	2.00	.35
Panama Canal		
(Pacific side)	2.15	.38
Chicago		.44

California is a buyers' paradise for oil, according to Mr. Minckler. "Railroads are buying oil in California and hauling it to Amarillo, in the heart of the Texas fields, because it is so much cheaper in California. This situation is draining the fuel oil supplies from California, and the only way to correct it is to increase the California price." (But competition prevents.)

Ships travel thousands of miles out of their way to bunker with cheap oil in California, he said, citing the example of the captain of a ship telephoning from the Panama Canal to find out about the oil strike situation, so he could decide whether to come to Los Angeles or continue direct on his route to Australia, if he could not load at Los Angeles.

Although reserve stocks in California were increased by 13,000,000 barrels in 1946, and refineries have been breaking all past records in recent weeks, oil men predict that the fuel oil supply will be consistently tight, and especially acute during the peak winter months. Despite an exhaustive search up and down the Pacific Slope, no substantial new production can be foreseen, and by 1951, according to Mr. Minckler, California probably will have to be importing 97,000 barrels a day.



 Planning, to be successful, must be a philosophy. There is a difference between a plant that has a planning department, and a plant that plans.

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# Controlling Production In the Small Plant

CURRENTLY we are being deluged by waves of management information of almost every conceivable sort. It is a good sign, as almost all of us who are interested in the subject of management will readily admit.

But, if one talks to Small Plant Management, particularly to that type involved with machine operations, one is likely to hear a different opinion. "The books, the articles and the talks," says this type of management, "are all written for the big operator. Look at this article: 'So-and-so saves \$75,000 by the installation of this or that.' Shucks, our total direct labor payroll annually scarcely equals that."

One can build quite a case for such a point of view. According to local standards of plant size, most available information is devoted to the activities of the larger plants. True, as the writers or speakers will be quick to point out, the presentations are directed at fundamentals that are not limited to the big plants; further, these fundamentals can best be illustrated by big-plant examples, particularly since they usually have the best data for before-and-after comparisons.

But Small Plant Management is not impressed. For underneath, the small plant men believe that their problems are different by nature of their size, and that not too much help is available to them from

By C. LLOYD THORPE Staff Executive Dalmo Victor, San Carlos, Calif.

present sources. This may be an evidence of serious shortcomings on the part of such management, but no matter. Because, so long as this attitude exists in the minds of these persons, it will also exist in their respective plants.

Now it will be conceded at the outset that there are lots of well-managed small plants, but the purpose of this presentation is to point out techniques that may help those plants that are not in such a

fortunate position.

As I see it, there are at least five major problems in small plant management in this geographical area that directly or indirectly affect the control of production in these plants. This does not mean that all five are inherent in all plants, or, as indicated above, that any one or more of them is in every plant. But they certainly are recurring, and are prevalent enough to itemize and examine, since they point to solutions that can be achieved only by fundamental revisions in attitude and activity on the part of many small plant managements. The five problems follow:

1. There is great need for PLANNING as a routine management technique.

We have heard of the student who defined Paul Revere as the man who jumped on his horse and rode off in all directions.

Well, Management Planning is the only technique which can prevent that kind of chaos in the small plant.

Now, lest there be any question, it is proposed here that there is a difference between a plant that has a Planning Department (at least, that is what the sign on the door says) and a plant that PLANS. For the former, however good, is just another department of activity; the latter is a philosophy—or requires a philosophy—and it is this latter that I expound.

At this point the reader may feel that I am advancing ideas that are both academic and aimed at pretty big plants. Not at all! I am trying to talk about the one-man shop as well as the 10- to 100-man shop that is so prevalent in these parts. A philosophy of planning is so very fundamental that it has no correlation with plant size. If it is accepted and used, it can really change things in any size plant.

2. Technical Accuracy as an Absolute

Essential is not generally recognized in the small plant. In a sense, this is a refinement, or a spe-

cific aspect of the first point. But it is so important that it merits special attention. It is often the one great source of inefficiency in the small plant. For example,

many of these organizations make machined parts from samples of dubious authenticity; from sketches so "marked up" that any resemblance to a designer's original ideas is indeed coincidental; or just from verbal instructions of someone.

Now, if technical accuracy (which is considered here to be embodied in drawings, parts lists and/or specifications) is not rigidly maintained, it is virtually impossible to exercise basic manufacturing control. Large, well-managed plants have long since recognized the necessity for constant vigilance here.

## 3. Control should be an Indispensable Tool of Small Plant Management.

This all too often is not the case. It may be controversial to state that, when compared with those of bigger organizations, small plant management is relatively unaware that controls can be set up to accomplish two important things:

First: Eliminate completely some headaches that should be routine and of clerk-level importance, but which because of improper emphasis can consume the major part of management time.

Second: Provide data for intelligent decisions.

While the former is important, in the final analysis it does not matter too much if the chief executive is running around doing other people's work, provided work gets done and provided he does not leave too many loose ends or frustrate the employees too much. The latter, however, is very important and in small plants does not get anywhere near the attention it deserves.

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One president of a prominent small business stated recently, "When I think of the little bit of information I have to make up my mind, it scares the hell out of me." Yet this same man has not made an absolute requirement of his control departments that they provide the kind of information which will allow for intelligent analysis leading logically to reasonable decisions.

Looking at the problem from the production point of view, these weaknesses are most apparent in the fields of Cost Control, Material (Inventory) Control and Production Control.

 Production FLOW as a Manufacturing Reality is something that many Small Plant managers do not recognize as possible.

These persons approach the physical aspect of manufacturing with the basic assumption, consciously or unconsciously, that there is no escape from the production confusion that besets them. This, of course, gets into the general field of attitudes and habits, which is dangerous ground for a person writing on the subject of production. However, it can be fairly stated that confusion can be a habit even as planning can be a habit.

In manufacturing, both confusion and planning are the result of a philosophy in regard to the work situation and, if the management has a habit of production confusion, some very fundamental changes in management philosophy are in order. For production can FLOW if it is so arranged that flow is possible. To achieve FLOW, however, more than consideration to the physical facilities is in order.

This concept of FLOW must be transferred to the paperwork that controls the production and which provides management answers; it must permeate the engineering, planning and any other pre-production groups (or the functional equivalent in very small plants which may be only one or two persons handling all of these tasks); and it certainly must be made dynamic in the plant among the production personnel. This brings us to the final problem.

The Small Plant has the greatest possibility for excellent industrial relations, but in many cases this potentially good situation is not realized.

Actually the small plant is ideally situated through the direct line of authority and the inter-related functions of individuals to set all the personnel on a firm foundation of good labor relations. Yet

in many small plants the exact opposite is true.

This is not at all surprising for, if management is not equal to the task of maintaining good personnel relations, the continued presence of such management will certainly not improve things.

The tragedy of this is that many managers are not aware that the increasingly complex problems of industrial relations continue to rest on basic things that do not change and that the small plant manager, by virtue of his proximity to the men and machines, is in an admirable position to do a real job.

If it is agreed that the nationwide problem of industrial relations has its solution in much more fundamental things than incentives of a money sort (and how long ago was it said that "man does not live by bread alone"?), where can we best begin to set up the correct human-relations-in-industry situation based on the fundamental nobility of man, if not in the small plant with enlightened management and workers that really know and (what is more important) understand each other, who can see their little world of work as a social situation primarily instead of an economic one and who can, working together, adjust their sights to this greater challenge.

#### Conclusion

Thus far, no attempt has been made to do other than pose the problems. These having now been established, the remainder of this presentation can deal with solutions.

In the final analysis, the real solution lies in the education, or re-education of small plant management. To some, this suggestion may seem presumptuous, futile and entirely too academic to merit the attention of busy men.

In a recent address Col. A. R. Heron, vice-president in charge of industrial relations for Crown-Zellerbach Corporation, stated that "unless the so-called management group takes the long view of its own responsibilities, our American way of life will be changed to some form of dictatorship in industry, in business and in government." This brilliant Western analyst of the American scene isn't fooling. Other

leaders are saying essentially the same

If management collectively will be indicted for the sins of some of their number, is it not incumbent on all of them to accept some responsibility for management education, even in the midst of our competitive struggle? Is this not better than the alternative that Colonel Heron has so forcefully shown?

In subsequent articles we will discuss techniques that can be effective tools for small plant management. The attempt will be made to suggest practical aids to the management of production in the small

However, the ultimate solution lies in management education at the management level by educators drawn out of the industrial field who have that fine combination of experience and perspective that will be equal to this race against time.



This is the first article of a series by Mr. Thorpe dealing with management and production control problems of the small plant. The author, University of California '34, has been assistant chief engineer, Ray Oil Burner Company; chief engineer, International Totalizer Company; general manager, Clarkson Company; and works manager, Dalmo Victor. He is now also instructor in production management and production control, School of Management, Golden Gate College, San Francisco.

Mr. Thorpe has seen the question from all sides, began to analyze these problems when, as head of a project involving a large amount of subcontracting, he came to realize that there was a certain pattern of difficulty for the small plants that were in trouble. He sees it as a management problem to be solved by education.

FORD MOTOR COMPANY PURCHASE RELEASE AUTHORIZATION No. 18 - PRODUCTION ONLY VENDOR: BO PART NUMBER NUM SHIP PT 10 12 BRANCH SHIP Most (01) BUFFALO parts from coast suppliers But Steady volume, day in, day out, is a (02) CHESTER Joundation on which to build. orders (03) CHICAGO may go (04) DALLAS (05) EDGEWATER Meeting Schedules (06) KANSAS CITY (07) LONG BEACH In Supplying Parts (08) LOUISVILLE (09) MEMPHIS By L. C. DISSER West Coast Representative of A. J. Browning Vice-President in Charge of Purchases (10) NORFOLK Ford Motor Company 11) RICHMOND, CAL

PROSPECTIVE Western suppliers of automobile parts need to gain an understanding of why the automobile manufacturers "Want what they want when they want it."

Otherwise these prospective suppliers will find it difficult to make their own operations mesh with those of the automobile manufacturers. Consequently this article is intended to give an idea why we at Ford believe that those who are interested in doing business with us should acquaint themselves with modern mass production methods and techniques before attempting to quote us prices.

It is not enough that the supplier has a modern shop equipped with suitable machinery, and that he has a fine organization capable of manufacturing precision parts from material supplied by a mill or warehouses.

He should also be qualified to assure us that he realizes the responsibility of prompt delivery, as specified. Further, that his credit with those who supply him is good, and that he has ample financial resources to guarantee his deliveries, except for acts of God, strikes, or other reasons beyond his control.

This requirement of prompt and certain delivery is not an arbitrary rule, but is essential because everything else has to stop when the parts fail to arrive. Few

of those outside the automobile industry realize the intricate organization necessary to deliver finished automobiles in accordance with the sales department requirements.

Involved in the successful operation of the modern automobile assembly plant operating as described here are several factors, one of which is the group of outside manufacturers or suppliers we are attempting to develop in Ford's West Coast purchasing program. Just as we need to know what they are doing, so they also must be able to visualize our picture.

#### **Daily Schedules**

The average assembly plants, like those of Ford located at Los Angeles, Long Beach and Richmond, California, produce 200 to 400 units daily. This daily production may include Fordoor, Tudor coupe sedans, coupes, convertibles and station wagons, and a truck line that may vary in horsepower and body type.

Daily plant schedule of types of both passenger cars and trucks are made up in advance from information furnished monthly from the home office planning and scheduling department, who in turn receive their information from the home office sales division. Copies of these schedules, which may differ for individual plants, are delivered to all departments in the organization.

Distributing parts from various Ford manufacturing plants and supplying manufacturers to comply with these plant schedules is accomplished through the planning and distribution department and the branch distribution department of the purchasing division.

Each of these groups is made up of individual distributors trained in the knowledge of parts and their numbers. Each distributor is assigned a specified number of parts for which he is at all times responsible, and his record book must show a perpetual inventory of parts in transit and in stock in the branches.

Bad order cars, wrecks, strikes and other interruptions cause the distributor many headaches, and he must know and be quick to take advantage of any angle in transportation possibilities that will permit him to overcome his problem and keep the assembly lines in the branch plants going. Branch stock superintendents are in daily contact with these parts distributors, and every effort is made to keep the latter informed of stock shortages caused by damage in transit, rejections by inspection or other causes.

The central follow-up department is responsible to both manufacturing and purchasing to see that material purchased from outside vendors is released and delivered to our various assembling branches as required. The various operations incor-

#### TWO MORE ARTICLES ON SUPPLYING PARTS

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This series of articles is intended to help prospective Western suppliers for Ford and other automobile manufacturers get a perspective of the possibilities that lie ahead for them, and the requirements they will have to meet. The general subjects of the remainder of the series are as follows:

August issue: Mass Production Methods. An article intended to give West Coast manufacturers a hint of what is common practice in the East in the manufacture of automobiles.

September issue: The Whole Story of the Manufacture of Ford Automobiles in

This article will review the previous material, and give special emphasis to the part the supplier takes in the picture.

porated in this department to handle this work efficiently are very intricate and would make a story of their own.

In this department the follow-up men, each looking after approximately 50 individual parts and following them through either by carload, l.c.l. or truck to great distances, are much like railroad dispatchers moving trains over a division of a railroad. They just know the stock of a particular part in an assembly plant, the requirements of that plant, the amount of material in transit and the ability of an individual supplier to provide sufficient stock to take care of that requirement. These operators must be familiar with all types of transportation rates and traffic routing. They are indeed specialists in their line.

#### Parts Released Early

Bodies, frames, wheel sub-assemblies, individual parts and standard parts are released from Ford manufacturing plants and suppliers four to six weeks in advance of the delivery date at assembly plants throughout the country.

In making these releases against purchase orders for a certain month's production, types, trim, and colors must be taken into consideration by the purchasing distribution department, who must follow this material until it is delivered where needed.

Each individual assembly plant has its own organization of sales, production and stock whose efforts must be synchronized to produce the daily requirements of a certain number of each vehicle, as indicated by their local sales department requirement records.

The stocking arrangements in our branch assembly plants are the result of much study, and are influenced by individual conditions pertaining to type of production, location of plant and traffic conditions. The stock department is headed by a stock superintendent who, with his staff of assistants, is responsible for the unloading of cars and trucks, the

movement of stock through the plant, and its condition at the point of usage.

It is a part of the supplier's responsibility to know the exact transit time necessary to get this material to its destination by car load, l.c.l., truck or airplane.

The Ford Motor Company has at present 13 different plants situated in various parts of the United States, and four more will be in operation by January 1, 1948. The supplier furnishing parts to all of these assembling plants must be equipped with a follow-up department conversant with every phase of transportation, its costs, and the time consumed in making deliveries. He must also be acquainted with regulations covering car loading, crating, and type of containers covered in I.C.C. specifications.

While deliveries from West Coast suppliers to our several plants in California would not involve all of the operations noted above, the West Coast supplier would have to set up an organization that would guarantee arrival of material to our plant as scheduled.

#### Prompt Delivery

Failure to deliver parts or material may stop production assembly lines altogether, or at least hold up delivery of automobiles, until the part is received. When production is stopped it means the temporary idleness of hundreds of employees, causing financial loss to both them and the company. Automobiles held in the yard or plant because of parts on shortage disrupt operations, and add to the cost of the finished unit.

The task of both the automobile manufacturer and the parts supplier in keeping the supply of parts under control is complicated by the fact that customers' tastes and requirements are so varied. It should be remembered, for example, that one type of passenger car, like a four-door sedan, may be furnished in half a dozen colors, each requiring a different interior trim, different color wheels and special accessories.

Usually the chassis of passenger cars of various types are the same, but bodies of one color moving by conveyor from one part of the plant must join fenders and hoods of the same color coming from a different part of the plant to be placed on the chassis scheduled for them. Thus we have chassis X with motor Y to be delivered as a black Fordor sedan with grey mohair trim and black with red striped wheels, coming off the end of the line as specified by the customer.

This unit may be followed by a convertible coupe of a different color, trimmed in leather, or a light delivery mounted on a passenger chassis. Modern mass production methods permit different types of units like those mentioned to be produced on one assembly line without interruption.

Important factors contributing to efficient handling and low costs are the spe-

cial devices fitted into railroad cars, which permit maximum loading and reduce damage to parts in transit.

Some of this equipment is designed to handle certain parts only, such as frames, engines; axles, body sections, while others are fitted with special racks which may be used to obtain maximum loading of miscellaneous parts without damage.

Complete automobiles are now shipped in special boxcars designed to permit stacking or loading one automobile over another. Automobiles are placed in position by hoists installed in the car and operated by electricity.

#### Handling Operations

Much of the material shipped from outside suppliers is loaded on skids which are hauled from railroad cars or trucks by electric or gas lift trucks. Ford engineers are constantly in touch with handling and traffic operations, both in our plants and the plants of our vendors. They have originated many time and cost-saving devices.

Systems of handling by pallet and lift trucks now in use in the plants of many of our suppliers have been developed by materials handling engineers who work in cooperation with the management of these firms. Naturally, any saving that accrues to the Ford Motor Company from any of these methods designed for the handling of large quantities of parts also reacts to the advantage of the supplier. Ford engineers work with the suppliers' engineers in developing types and quantities of equipment necessary to do the job, and necessarily an agreement must be reached satisfactorily with both parties before any money is invested.

The Ford purchasing department also has qualified manufacturing experts who go into the plants of our suppliers and help in the development of new fixtures, machines and other types of assistance that may be found necessary to reduce costs or to accelerate production.

 One of the special handling arrangements worked out for transporting Ford parts.



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# Saving Hand Operations In Quick Freezing; Finishing Electrical Parts

MPORTANT steps forward in reducing the number of hand operations involved in quick-freezing foods have been taken in the system adopted for handling crab and fish in the new trawler "Deep Sea," which is operating this season out of Seattle into the Bering Sea.

Hand operations before freezing are reduced by packing the sea food first in large molds which are multiples of the various sizes in which the product is to be merchandised, instead of the usual system of pre-packaging. After the product has been frozen in the molds it can be cut to various lengths, glazed and packaged with automatic machinery.

This steel-beam trawler, operating out of Seattle to catch, process and quickfreeze giant Alaskan king crab and other fish in the Bering Sea, is the first combination in American fishing history of a true ocean-going fishing vessel together with a complete processing plant.

After the crab meat has been shaken and picked clean, it is loaded into specially designed freezing trays. Both the trays and their lids are composed of three units, roughly 38 in. long,  $3\frac{1}{4}$  in. wide and  $1\frac{1}{4}$  in. deep, tied together with cross bars. The lid engages the tray tightly and is kept in place with four locking bars. This permits freezing under pressure, which results in the exclusion of air from the commodity and greatly reduces the chance of freezer burn or commodity deterioration.

After the trays are loaded they are slid across to the topside opening of the freezer trunk which houses the quick freezing mechanics. While it serves the function of freezing the commodity, the freezing machine at the same time transfers it from the processing room on the main deck to the packaging room below.

The trunk houses the finned coils for freezing, the three-foot blast fan, the louvres which direct the flow of current and the mechanism for lowering the trays. Twin sets, one inboard and one outboard, of endless chain running off their four shafts carry angle irons. On these synchronized angle irons a row of four trays at a time are placed, with three inches between rows.

#### Freezing Process

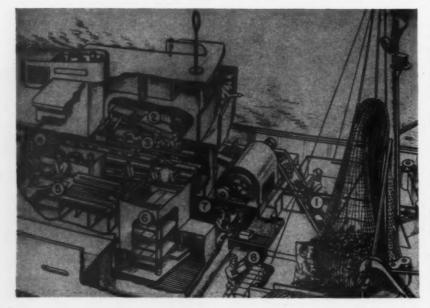
When the trays first enter the trunk they pass through several feet of precooling blast air and then when near the critical temperature, enter the area of direct blast and coldest temperatures. Because of the high conductivity of the metals used, and the tremendous volume of cold air, the crab is frozen very quickly.

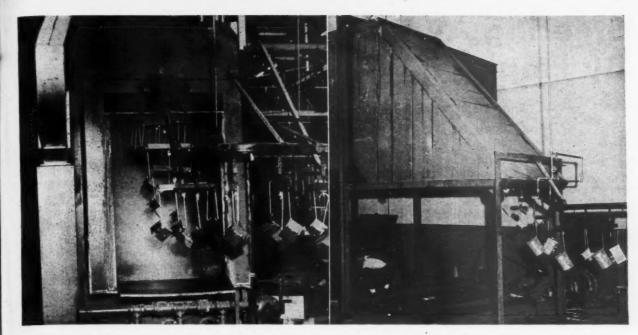
At the lower end of the trunk the trays are automatically discharged into the handling room, where they are defrosted hydrostatically and the long bars of frozen produce are removed. The trays are then automatically washed and disinfected while traveling up a hydraulically operated elevator back to the processing room.

In the packing room below decks the bars are cut into 7½ or 3¾-in. sections which give a 16-oz. fish package and a 12-oz. crab package. These units are then doubly glazed in fresh water to guard against freezer burn. After glazing they are wrapped in aluminum foil and heat sealed, which results in a nearly perfect package. Placed in shipping cases they are then immediately sent forward into one of the two zero storage holds.

Fillet of lemon sole, flounders and other Bering Sea fish are handled in much the same manner, except that all fish fillets are put up in one-pound aluminum foil packages. In the case of crab in the shell, four

• Processing of king crab and fish on the "Deep Sea" involves eight steps, shown in the diagram below: 1, sorting and cleaning the crab; 2, steam cooker, conveyor; 3, shaking (and fillet) table; 4, fresh water washer; 5, inspection, weighing, and packing in freezer trays; 6, continuous quick freezer; 7, aluminum foll packaging; 8, refrigerated case storage. The entire cargo is thus processed before it gets to port.





• Material enters the gas-fired washer (above) as on the pro-

duction line. Here parts are cleaned thoroughly for painting. to the gas-fired oven. Above, parts are emerging from oven.

or more sections are weighed out on the packing table, stacked end for end and then tightly rolled with waxed locked

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paper, the ends of which are rolled in and stapled. These packages are then frozen and cased up in the ordinary manner.

#### FINISHING ELECTRICAL PARTS

Production-line movement of materials through the cleaning and finishing department, as well as everywhere else in the plant, is one of the features of the new Western division plant on the Square "D" Company, manufacturers of electrical products, on Valley Boulevard, Los An-

Work is transported through all the stages of washing, painting and drying by an overhead conveyor system. Materials are first channeled through a cleaning process, passing through a washer of the most modern type.

Basically, the washer has four compartments: A bath containing the hot alkalin cleaning agent, two hot water rinses and a hot air rinse. In this cleaning process, the oils and greases to be removed are dissolved by a powerful cleaning agent which has unusually strong dissolving and penetrating powers, and is non-inflammable and non-explosive, hence it can be heated without danger of fire hazard.

After washing and drying, the conveyor carrying work is channeled to the painting section. If work being processed is to be dipped (painted) a portable paint tank is placed directly under the conveyor. The overhead conveyor carrying the work then passes through the dip tank.

Paint in this tank is agitated constantly by means of a small electric mixer. If work is to be sprayed, the portable dip tank is pushed aside. Next the conveyor passes

through a water curtain paint spray booth where work to be sprayed is painted.

After painting, the work enters a large gas-fired oven which is used for baking painted parts. It is approximately 75x15 ft. and can handle material 2' 6" wide by 4' high by 5' long. Materials going through the oven make three passes to a total length of 165 feet.

With this equipment it is possible to process 2,000 pieces per hour. It is an "A" type oven designed to save valuable floor space and is equipped with air traps at each end to conserve fuel. It also has forced draft ventilation. This oven is heated by warm air, part of which is re-circulated after being mixed with fresh air.

Square "D's" new gas oven is extremely simple. Briefly it operates as follows: When starter button on the control panel is pushed, the forced air draft fan is activated, purging fouled air from the firing chamber and discharging it outside the plant building.

After the foul air has been discharged, the oven is lighted automatically by a spark lighter to the pilot. This pilot lights the main burners, which are of the direct-fired type with 1,000,000 BTU capacity.

The oven has all the latest types of safety controls including Flame-O-Trol pilots. An additional safety feature is the air flow switch which shuts off gas in the oven in case of power failure or in the event the fan fails to function.

#### **New Plastics Used** For Electronic Circuits

One of the latest developments in the adaptation of electronic circuits was reported on by Dr. Edward U. Condon, director of the National Bureau of Standards, in recent talks before engineering societies on the Pacific Coast.

It is a new plastic called NBS Casting Resin, in which a complete circuit can be potted." The electronic device, through the use of this new plastic, can be used in acid environments which would disintegrate ordinary open-to-the-air devices. In addition, it allows the circuits to be put up in much the same way as radio tubes are, allowing plug-in installation.

One of the most important advances in the electronics art came about through the development of the printed circuit technique, according to Dr. Condon. In this process, entire radio or electronic circuits are actually printed on flat plates-or even on the glass of a radio tube itself. Circuit wiring consists of silver ink applied through a stencil.

Resistors are painted on with carbon ink while tiny condensers, now available through the use of certain rare earths with unusual electrical properties, complete the basic circuit. The radio tubes are themselves no bars to extreme miniaturization, because they can now be made as small as a finger joint.

Design specifications for the highly successful radio proximity fuses used on bombs, rockets and mortar shells were primarily responsible for the search which ended in the development of the printing circuit method.

# Steering Away From Losses By Employing Market Research

Analysis of sales potential puts some Western manufacturers on road to success; neglect of it causes downfall of others

For first time in its history, company goes in the red, although others in same line apparently clearing nice profit.

Analysis: Fully 30 per cent of assets tied up in inventory, supposedly needed to supply demands of all the wholesalers. Unit sales over a period of years revealed that 90 per cent of inventory consisted of 20 items, having only small demand. Of these, 19 contributed a loss through production and warehousing costs not justified by sales.

Solution: Eliminating 15 of these items put the company in the black within six months

Product not selling well in certain territories; in one, outsold by a locally branded item of lower quality and price.

Analysis: Consumer interviews by research department showed he was selling primarily to top income group, local competitor to bottom group. He actually had more customers, but since lower income groups used more of the product, his total sales were less. Study showed lower groups preferred sharp, tangy taste; upper groups liked sweet, mild product.

Solution: Put out another variety of the item, which not only gained him sales lead in that area but picked up enough customers elsewhere to provide good volume.

3 Since this food manufacturer had some dairy products, would baby food business be profitable, since production studies showed he could manufacture at a highly competitive price?

Analysis: Two major brands firmly entrenched had about 80 per cent of the sales. Only by heavy advertising and promotion expense could dent be made in market after several years of effort. Without it, market too limited.

Solution: Company decided not to enter the new field.

Nine examples of market analysis by several food manufacturing and distributing organizations, reported by Dr. A. B. Blankenship, managing director of National Analysts, Inc. Costs of one item rising alarmingly because of steady, serious increases in raw materials cost.

Analysis: Substitute or synthetic base seemed key to big reduction in production

Solution: Chemical department devised a substitute; consumer tests proved users could not differentiate between taste of natural and artificial product. Production converted 100 per cent to new base.

Nature of the market. Who were the logical consumers?

Analysis: Apparently this was related to length of time family had been in America. Analysis showed younger and more Americanized women tended to be the actual and potential buyers. Immigrants, their daughters, and older women did not go for "new-fangled" product.

Solution: Marketing outlets catering to Americanized and younger women sought, because advertising dollar could be spent more effectively and costs lowered.

ERE are three examples of southern California postwar business casualties resulting from lack of market analysis, as reported by James G. Buehner, secretary-treasurer of Standard Paper Box Company of Los Angeles.

A well-known manufacturer of sound equipment on the West Coast prior to the war, who went all out for war production. Equipment and personnel were expanded about tenfold to meet government orders—which were mostly of an emergency nature.

This firm made what it thought was substantial profits during the war period. It invested heavily in specialized equipment and greatly expanded its force of technicians. The principals took rather substantial salaries for themselves.

At the end of the war, the firm found it difficult to maintain a sales volume equivalent to its prewar business. It did not move rapidly enough in reducing its staff of technicians and dispose of excess productive equipment.

To add to its troubles, the war period had more than doubled labor rates, and its labor force had come to expect a continuation of various entertainments provided for them during the war. In the midst of all of these reconversion problems Uncle Sam renegotiated its contracts and levied a claim in excess of \$400,000.

This series of blows forced this firm into the hands of creditors. Even though its products have worldwide acceptance, it is questionable whether it will ever be able to work its way out of its difficulties.

A plastic firm that started in Los Angeles, making many highly specialized items, with Uncle Sam as its only customer. It was successful in obtaining the last word in plastic moulding machinery and in setting up a very elaborate and efficient die

and tool shop. Many thousands of dollars were invested in specialized dies and tools.

This firm was so busy with war production that it gave no thought to postwar distribution. At the termination of hostilities, it turned to the manufacture of phoographic equipment. For a short time it was apparently successful. However, it was a high-cost producer and had much to learn in coordinating its production with customer demand.

Soon it was faced with the necessity of closing down its tool and die room to cut costs. It found that its customers were beginning to fall away as the old-line producers of photographic products began to reappear on the markets.

This concern has fallen into the hands of the creditors and is now in the process of a drastic retrenchment, being forced to sell off most of its equipment. It is questionable whether it will be able to survive at all in the competitive field, even on a After changing over to wholesalers, could profits be increased still further?

Analysis: 60 per cent of the wholesalers accounted for 90 per cent of the volume on the above-mentioned item. Further analysis showed the poorer 60 per cent had characteristics of capitalization, geographic coverage, etc., quite different from the 60 per cent successful dealers.

Solution: Company trimmed out the chaff, reducing total sales volume, but ending up with more profits. Also set up a policy for examining and judging wholesalers before accepting them as customers, thus putting expansion of distribution on an efficient basis.

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What magazines or newspapers would be most effective in reaching a market?

Analysis: Survey determined cost of reaching 1,000 prospects and customers in each major publication.

Solution: By determining overlap in readership, cost of each additional thousand customers through addition of each publication to major list computed. Thus the value of each medium evaluated dollar-wise of expense.

8 Were goods being distributed through the most effective channels?

Analysis: In one item, 60 per cent of sales made to wholesalers, 40 per cent

small scale. It is paying the penalty for lack of foresight and planning.

Several highly skilled production engineers who, finding themselves with substantial savings from wartime earnings in an airplane plant, decided to set up a manufacturing plant for fishing gear and other similar equipment.

Their production "know how" enabled them to design excellent products. They were able to plan effective production flow. But, as time went on, material shortages and lack of adequate financing slowed them down to such a point that they had only begun to produce in quantity when some of the old-line companies returned to the field.

They quickly learned that they had not paid enough attention to the problem of selling and distribution and soon found themselves in a bankrupt condition. As a result, they have lost their entire wartime savings.

through brokers, but brokers' sales only accounted for 20 per cent of profits of total sales on this item. Company, in order to sell brokers, reduced prices yet absorbed some of the wholesalers' functions. Consumer research conducted the year before on a similar problem, showed 50 per cent of sales through independent stores, 10 per cent through super-markets, 10 per cent through miscellaneous outlets. Cross-section of the outlets then were interviewed, showed fully 63 per cent of retailers bought through wholesalers.

**Solution:** Company changed over entirely to wholesalers, at tremendous saving.

9 How to determine standard of performance for salesmen.

Analysis: Decided on average sales experience of its salesmen. Ascertained that fully half the sales force averaged below this figure, although not concentrated in any one geographic area, hence salesmen themselves were at fault. Salesmen who sold only 20 per cent of average daily orders proved to be also below average in contacts.

Solution: Poorer salesmen notified of their shortcomings. Bonus plan put into operation. Result: net sales personnel cost per dollar of sales dropped 25 per cent.

#### SOME OF THE THINGS THE WEST IS PRODUCING

Here is probably the only detailed and accurate report available on postwar production of manufactured goods in the West since the war. It is a summary made by Civilian Production Administration for the month of June, 1946, from plants accounting for most of the output. Since that date output has stepped up greatly, but no statistics are available. Where no figures are shown for Oregon and Washington, the production from those states has been combined with other states to avoid disclosing individual output.

INDUSTRY	CAL	IFORNIA	OF	EGON	WASH	INGTON
	No. Plants	(\$1000)	No. Plants	Shipments (\$1000)	No. Plants	Shipments (\$1000)
Heating & Cooking Apparatus						
(except electric)	20	4,286	3	115	3	83
Radio, Radar Equipment, Phono-		,				
graphs and Parts	12	1,342	******	*****		******
Blowers, Exhaust and Ventilating						
Fans	3	189	*****	*****	p	******
Aircraft Engines and Parts	5	1,249	*****	******		001000
Aircraft Parts and Auxiliary Equip't						
(except engines, propellers, instru-						
ments)	8	994	*****	*****		*****
Cranes, Hoists, Winches, Derricks	*****	*****	*****	*****	5	380
Fabricated Structural Metal						
Products ①	20	1,901	4	142	3	352
Valves, Faucets and Fittings	10	1,006	1	*****	*****	*****
Generators, Electric Motors	4	798	1	*****	1	*****
Metal Furniture	2	*****	presen		1	*****
Commercial Cooking, Food Serving,						
Fixtures, Equipment	3	190	*****	*****	*****	*****
Power Boilers, Associated						
Products ③	10	1,294	*****	*****	1	******
Metalworking Machinery (except						
machine tools) 3	4	*****	******	*****	1	******
Kitchen, Household Articles	3	186		*****	*****	
General Hardware	5	444	******	*****	*****	*****
Mechanical Power Transmission						
Equipment (except bearings)	4	161	*****		*****	******
Oil Field Machinery, Tools	16	2,091	*****	*****		******
Wiring Devices, Supplies	5	503	p	*****		*****
Metal Closures and Crowns	3	378	*****	*****	*****	*****
Steel Shipping Barrels, Drums, Pails	3	962	2	*****	*****	*****
Metal Cans ①	16	4,998	1	******	5	1,562
Food Products, Machinery	9	1,139	1	******	1	*****
Mechanical Measurements	5	787	1	*****	*****	******
Conveying Equipment	5	1,210	*****	******		******
Builders' Hardware, Hardware for						
Aircraft, Ships, Motor Vehicles,						
Railroads, Furniture	5	444		*****	*****	******
Ship, Boat Building and Repair	31	11,709	6	2,300	14	5,059
Pump, Compressor Manufacturing	13	2,644	*****	*****	1	*****

- 1 plant each in Ariz. and Mont., 2 in Colo., account for shipment worth \$447,000.
- 1 plant each in Colo., Ida., Mont., N. Mex., Wash., account for shipments worth
   \$311,000.
- 1 plant each in Colo., Ore., Wash. and Utah, account for shipments worth \$200,000.
- 9 2 plants each in Utah and T. H., 1 each in Colo. and Ore., account for shipments worth \$1,585,000.
- 3 Total Western shipments, \$795,000.

July, 1947—WESTERN INDUSTRY

# Conveyor Combinations Cut Labor Costs 38 Per Cent

AXIMUM use of the conveyor type of materials handling system in a seemingly unlimited number of variations and combinations is a major factor in plant economy at the Seattle plant of the Tyle-Bord Company.

Not only does material travel all of the way through the plant during the manufacturing process on conveyors of all types, but also a large percentage of the storage of semi-processed materials is on conveyor racks.

Although labor and raw material costs have risen about 25 to 50 per cent since 1941, the company has been able, through mechanization and improved employee relations, to produce five times as many board feet of Tyle-Bord per-man-per-day as was produced before it stopped for war production in 1941. Rated capacity of the plant is 36 lineal feet of four-foot wide board per minute.

Since construction of the new plant in 1944, labor costs have risen 39 per cent.

Yet, because of mechanization and efficiency, the labor ingredient cost per unit has been reduced 38 per cent.

This production record is due mainly to the elimination of waste motion. In converting the plant to peace-time production, special attention was given to the elimination of handling of materials by man-power, substituting machine handling wherever possible.

The Tyle-Bord Company operation consists principally of fabricating and surfacing Masonite Presdwood board to produce a finished wall material used in installations such as kitchens in place of glazed ceramic tile. The process consists of cutting boards to size, scoring to provide a streamlined appearance, and application of an extremely hard, waterproof plastic surface.

1. ROLLER CONVEYORS are used in the storage of lumber cut to dimension for making shipping crates. The two-way roller conveyor in left foreground can be raised and lowered by a small electric hoist to load the five-deck rack. The set of rolls in the center, set at right angles to the main run, allows a 90-degree change of direction. Each deck of the rack is a separate roller conveyor, so lumber may be moved all the way through the racks to the crate making section beyond. In the right background are finished crates hanging from hooks on an overhead roller conveyor used for storage and transfer of the crates. Conveyors are operated by hand. Easy running rollers permit one man to handle large quantities of material with little effort.

2. ROLLER CONVEYORS find another application as sheets are unloaded from the preliminary drying oven. Rollers are placed at right angles to the direction of movement out of the oven, to facilitate transfer of the sheets across the aisle to the prime coat automatic spraying operation. The conveyor is mounted on a hydraulic hoist which can elevate and depress to meet the level of any one of the 14 flights in the oven. Movement of the hoist is controlled by two foot pedals on the conveyor frame through solenoids. The oven is fed by a similar arrangement except that material moves on a wheel conveyor, instead of rollers. A similar hoist is used.

 WHEEL CONVEYORS arranged as a versatile two-way unloading table at the final baking ovens are mounted on two hydraulic hoists. At the end of each oven



is a cross-run to facilitate movement out of the oven. When a sheet has cleared the oven and is completely on the table, the cross-run can be lowered by a small pneumatic hoist, leaving the sheet on the longitudinal run. Tipping the table causes it to move down by gravity to the far end of the table, where the third cross-run is available to assist in moving the sheet to the next operation. Entire table can be raised or lowered to the level of any of the 10 oven flights.

Sheets which are to be stripe-painted move from the table to five-deck storage racks which are roller conveyors. Sheets not getting this treatment move onto belt conveyors at the end of the table.

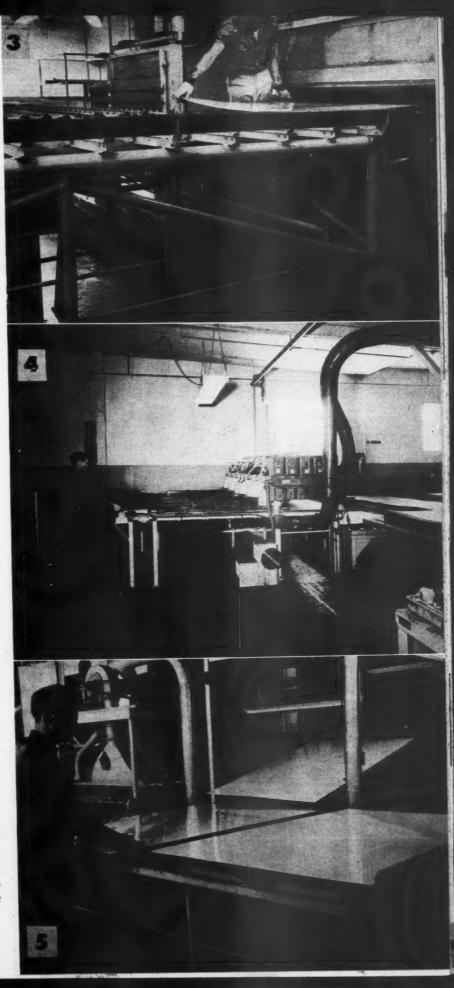
4. COMBINED WHEEL AND ROL-LER CONVEYORS are used to provide two-way selective movement of material at a number of locations throughout the plant, and are used here as sheets are moved from the saw cut up either to the scoring machine or to the base and cap molding shaper and sander. In this type the wheels are set at right angles to the rollers and are raised and lowered by small pneumatic hoists which move the conveyor frame just enough to change the support from rollers to wheels or vice versa. Sheets are moved through the saw by a multiple, narrow chain conveyor.

Two-way combined roller and wheel conveyors cover the storage areas. Runs in the two directions are arranged so that any specific stack of S2S Presdwood may be brought to the head of the dehydrating oven feed simply by shifting stacks back and forth across the storage area.

Another application of this arrangement is used en route to the rubbing table, which involves a considerable distance, an aisle crossing and a doorway. This is done on a roller conveyor, of which the last section has the wheel combination. The frame of this section is mounted on flanged wheels running on a track which crosses the aisle, passes through the doorway, and ends at the head of the rubbing table line.

5. INSPECTION utilizes four types of conveyors, and sheets make a 180-degree change of direction with almost no handling. Coming down an inclined belt conveyor the finished sheets come onto a two-way conveyor where they are held during the inspection, then shifted to the right, direction changed again, and sent off to be picked up by a cable conveyor and taken through the re-hydration line.

6. BELT CONVEYORS are used as extensively in the plant as are rollers, but are not quite as apparent. Types are about equally divided between rubberized fabric, chain, and cable, and all of the applications can be classified as narrow, multiple belt conveyors. Here a belt conveyor overhead takes the finished sheets from the



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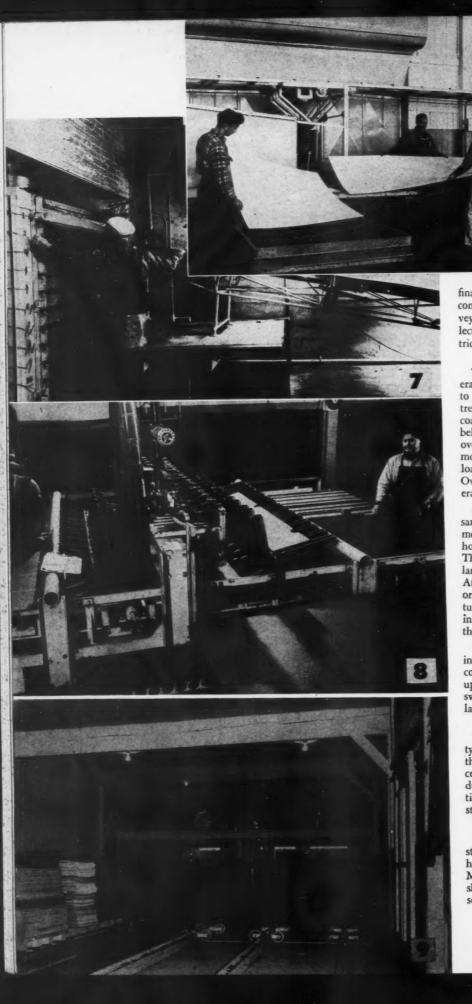
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final oven drying to inspection. A wheel conveyor striping table under the belt conveyor is for additional processing of selected sheets. All belt conveyors are electrically driven.

7. CHAIN BELT CONVEYORS generally are used where sheets are required to go up an incline, or are subjected to treatment of some sort. Here the prime coat drying oven is being loaded. A chain belt conveyor with cross-bars is used. The oven-loading end of this conveyor is mounted on a hydraulic hoist to permit loading of any one of the ten flights. Ovens have wheel conveyors, gravity operated, and automatically braked.

Similar chain conveyors are used on the sanding table, where rubber suction cups, mounted on cross-bars on the conveyor, hold the sheets firmly during the buffing. Then sheets are dried under infra-red lamps, still moving on chain conveyors. At the end of the drying line the conveyors are equipped with a safety device to turn off the lamps and stop the conveyor in case an attendant is not ready to handle the sheets.

The safety device consists of two arms inclined in the direction of travel. A sheet coming to the end of the conveyor rides up onto the arms, the weight of the sheet swings the arms down, and power for the lamps and conveyor is disconnected.

- 8. HOODS on the scoring machine are typical of those used on all machines throughout the plant. All dust from processing operations is exhausted through ducts to a central cyclone, where solid particles are removed and dropped into a storage bin.
- 9. DRY KILN DOLLIES carrying stacks of Masonite Presdwood for storage here move on the two sets of triple tracks. Moveable track sections on wheels permit shuffling of the dollies to and from the second set of tracks at the left.

# Utah Industrialists Claim A Superior Labor Force

Survey of Utah manufacturers shows they believe their workers produce more and are more adaptable than those in other areas

TAH and Intermountain industrial labor is superior, both in adaptability and productivity, to that in other regions, according to the evidence revealed in a recent survey of manufacturers in Utah.

They were asked in a questionnaire to compare the quality of Utah labor and the wages paid to those in other areas where the member company has plants or affiliations. The queries were part of a project to determine favorable and unfavorable factors in Utah industrial operations.

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acks. ermit the Of the 46 firms reporting on Utah labor, 16 do not have affiliations outside of Utah and apparently based their answers on other means of comparison, such as industry-wide technical publications, previous affiliations of the management with plants in other areas, or on personal observation and opinion.

In compiling the survey the association found that a large firm with 23 plants located throughout the United States reported that a newly-established Utah plant has consistently rated among their top three plants showing lowest wage costs. This would appear to be a result of superior adaptability and enthusiasm on the part of the Utah laboring people. The top-ranking level of education in the state undoubtedly plays a large part in bringing this situation about.

A clothing manufacturer reported he is "extremely pleased" with the rapidity with

By C. L. CHRISTENSON
Chairman, Committee for Industrial Expansion
Utab Manufacturers Association

which the Utah workers learn their new jobs. This opinion has been voiced by officials of other organizations newly located in Utah.

On the other hand, another ladies clothing manufacturer, who has several plants throughout the West, reported that he finds the labor in his Utah plant is "slower" than in the other factories.

This opinion was not widespread among local management. It is quite possible that such a condition may appear in new industries for a time, as the Utah people have not grown up in the heritage of repetitive factory labor which is so prevalent in certain sections of the country.

#### Marked Contrast With East

In studying the questionnaires of those companies which operate plants throughout the United States, and outside of the Mountain states, it is found that it was their unanimous opinion that Utah labor is superior in adaptability and productivity to the labor force in these other areas.

Where Utah manufacturers have plants or affiliations in the states directly surrounding Utah or in the Intermountain West, there was no wide variation in the quality of the labor force or wage rates. This is true because the several states are so similar in economic structure and social and cultural backgrounds.

Better than seven out of every 10 employers who answered the questionnaire considered local workers superior in adaptability and six out of 10 found them better in productivity. From the standpoint of equality, nine out of every 10 managers were of the opinion that Utah workers are equal to or better than those in other areas about which they have information. This was likewise revealed in the wage costs answers where eight of every 10 employers had wage costs equal to or lower than plants outside Utah.

This condition does not apply to Utah alone. It is true for the entire Intermountain area as compared to other sections of the country.

The association thinks a representative sample of answers was obtained in the survey. Because of the small size of the sample, however, unfavorable opinions of local labor which had developed as the result of labor troubles or personal grievances, were reflected too heavily in the survey. Because of personal contacts and conversations with employers throughout the state, the association is confident that the survey errs only on the "unfavorable" side.

QUESTION: How does Utah labor compare with that in other areas where your firm has operations?

QUESTION: How does the wage rate compare?

QUESTION: How does the wage cost compare?

#### ANSWERS:

(rercentage of replies)	Quality		Produc- tivity
Superior (excellent, better and favorable answers		72.2	61.1
Good (fair, equal and satisfactory)	21.6	16.7	27.8
Below average	10.9	11.1	11.1
Five of the firms a		did not ha	ive actual

#### ANSWERS:

entage of replies)	
Lower	23.1
Same	51.0
Higher	25.5

Five answers of "favorable" and "good" because they were ambiguous were not included, they probably should be tallied in the first two categories. Some 15 firms did not have affiliations outside Utah while 19 had plants only in Intermountain area.

#### ANSWERS:

(Percentage of replies)

Lower or	equal	to	77.7
Higher			22.3

Of firms reporting their wage costs higher, four listed a higher wage rate, two indicated lower productivity, one listed no explanation. Five of these firms had no out of state plant, and the others had plants only in Intermountain area.

operations outside of Utah.

# Mechanical KINKS

By W. F. SCHAPHORST, M.E. Former Engineering Instructor New Mexico State College

A CORRESPONDENT writes that every time they start a centrifugal pump in their plant they are obliged to prime the pump. He states that the pump does not operate as well as it once did and he would like to know what is the matter with it.

Pump priming is not at all uncommon with centrifugal pumps. Even where foot valves are installed in the suction pipe for the purpose of holding the water in the pipe when the pump ceases to operate, air may get in and permit the water to drop. Sometimes foreign objects—pebbles, dirt, sticks, etc.—manage to get caught in foot valves, holding them open, and when that happens the purpose of the foot valve is defeated.

If air leaks into the suction line, as already stated, it is quite possible that all of the water will be drained out and the pipe will be filled with air instead of water. Air inleakage is further a "bad thing" in that it reduces the capacity of a pump, which may be one of the reasons why the above pump is not operating as well as it once did even after it is primed and operating.

In some instances the air carrying ability of water is utilized where the pressure of the system is maintained pneumatically. Air is then purposely admitted into the suction, in small amounts, and continued



• This 60-ton, 40-foot dynanometer was built by Knuckey Truck Co. of San Francisco and G-E to measure drawbar pull of army tanks. Can also be used as a prime mover.

until the pressure tank contains sufficient air.

Again, if the water being pumped is "too hot," similar trouble will be experienced. When it is too hot, steam will be generated in the suction pipe due to the reduced pressure.

"Thus, for example, if the temperature of the water being pumped is 212 deg. F. it cannot be pumped "by suction" at all. It will be necessary to submerge the pump in water of that temperature in order to pump it. If the temperature of the water is, say 183 deg. F., the maximum lift is 15.4 ft. If the temperature is 170 deg. F. the maximum lift is 20 ft. And so on.

An interesting and valuable kink that was recently brought to this writer's attention in connection with centrifugal pumps is this: in some instances it is possible to increase the capacity of a centrifugal pump by changing impellers.

• Tenite plastic strips extruded by Plastic Process Co., Los Angeles, used for covering joints and seams in converting army planes to civilian use. A barbed flange prevents their working loose. Strips also easily applied to square or rounded corners.

Let us say, for instance, that you buy a pump for handling a given quantity of water against a given head at best efficiency. An impeller in that same pump which will handle more water will give a lower efficiency, so, the thing to do is to use the "smaller" impeller. Then, when the time comes to pump the greater quantity of water the "larger" impeller is installed and it, in turn, handles that quantity of water at best efficiency.

Ever install an ordinary valve the "wrong way"? Most users of valves know that there is a wrong and right way, yet it is not at all uncommon to find one that is in wrong and consequently it cannot be packed while under pressure.

An unusual occurrence has just been brought to the writer's attention regarding a slight error that was made when installing the feed pipe in a boiler drum. Instead of placing the pipe in such a position that the opening in the pipe would feed the water upward, the holes were installed at the bottom.

The drawing showed the pipe correctly, but the installer probably thought it would be better to direct the streams downward rather than upward. Maybe he thought that the streams would squirt up into the steam space — which of course would be undesirable. Or, more than likely, he didn't think at all. Anyway, the pipe was installed incorrectly, and as a result tubes were burned out in that new boiler in one month's time. It was a large boiler—over 50,000 lb. of steam per hour and over 400 lb. per sq. in.

The plant men couldn't figure it out, and they were obliged to send for an expert. Even the expert was baffled for quite a while. But modern boiler experts are really clever, and in the end he came up with the correct solution: he discovered that the feed pipe had been installed upside-down. After turning the pipe around there has been no more burning out of tubes.



# Grey Market Probers See a Battle Ahead

Senate sub-committee locks horns with powerful interests while it investigates what's behind the grey market in steel

By ARNOLD KRUCKMAN
Washington D. C. Editor of
Western Industry

ASHINGTON, D. C. — The driving force behind the effort to discover the truth about the grey market, which has throttled the supply of steel, is George F. Meredith, a Californian, who is the executive director of the Senate Small Business Committee.

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He is president of the California State Society of Washington, D. C. He came here in 1942 from Los Angeles where he was executive vice-president of the Elektro-Kold Sales Company, and at various times was an official of the Associated Hospitals of Southern California, the California Physicians Service, president of the Squires Club, and prominent in other organizations.

The sub-committee of the Senate Small Business Committee, in which Meredith is the dynamo, is headed by Senator Edward Martin, Pennsylvania, as chairman, and includes Senators Harry P. Cain, Washington; Irving M. Ives, New York; Allen J. Ellender, Louisiana; and Spessard E. Holland, Florida.

This investigation which the group has been recently conducting takes real courage. They are locking horns with one of the biggest combinations in the economy of the United States. Observers here are conscious that this enquiry not only makes acutely uncomfortable one of the greatest industrial groups of the nation, but apparently crowds the insiders of the great international labor unions.

#### **Unholy Union**

There are reasons to suspect that some steel makers on the management side have a not very holy union with steel makers on the labor side, to control the supply of steel for the purpose of selling the material at triple (and more) than mill prices. The suggestion that this is the situation has been common gossip in the capital for months, and has been intimated by those who use steel in some of the largest industries of the nation. But no agency of the Government, either on the Hill or in the

Departments, has been willing to risk a battle, until Meredith's Senate committee started to pry.

Unhappily, the smaller businessmen who use steel have not been willing to expose themselves to punitive economic reprisals, and it has been incredibly difficult for the committee to secure the sort of evidence upon which legal action may be founded. In addition, the committee has been inadequately financed by Congress itself, and has largely been compelled to do its work as a patriotic job.

There are more than rumors that there is the usual pressure to drop the investigation, which may account for the fact that the Senatorial hierarchy, which makes the rules, has not looked very favorably upon the work of the Senate Small Business Committee in the steel investigation. Apparently it is hoped this enquiry may die an unnatural death at the end of September, when the Senate Small Business Committee will pass out of existence, unless sufficient national interest forces the Congress to renew its life, and provide it with some means to continue its work.

#### Steel Users Afraid

The doubt about the interest of the nation does not stem from lack of attention on the part of the public, but seems to rise from the fear of smaller users of steel to make the authenticated complaints which will force continuation of the exploration of the situation.

Meredith is scheduled to visit the West Slope early in July to investigate the shortage of steel among the manufacturers out there. His investigation will determine whether or not the subcommittee will come out and hold hearings on the spot. Meredith will visit Los Angeles and adjacent areas, as well as the San Francisco Bay region, the Portland district, and the area around Seattle, as well as other centers of the West Slope where the use of steel is important.

One of the best-informed writers at the Nation's Capital, Arnold Kruckman, presents each month authoritative comments on political developments and their practical application to industry of the West. Any reader who wishes additional information may write to him directly, using business letterhead. at 1120 Vermont Avenue, N.W., Washington, D.C. Inquiries will be answered free of charge. You also are invited to contact him personally in Washington. Copies of pending congressional bills may also be obtained free of charge.

The sense here is that the politics of this investigation goes far deeper than the issues that are involved in party conflicts. If the work of the committee is throttled, and the enquiry is suppressed, it is feared the impulse will not spring merely from differences between New Dealers, radicals, Democrats, and Republicans, but may challenge the very essence of the thing upon which democracy rests.

#### Powerful Outside Influence

Rightly or wrongly, there will remain the suspicion that the combination of some big business and some big labor may be able to stop the orderly and legitimate processes of government; and, obviously, if these elements are more powerful than the constituted agencies of government, there will be a strong feeling that these elements are superior to government itself.

Should this unjustified impression be allowed to prevail, even mistakenly, there will be millions in this country, as well as in other countries, who will insist that we are coming perilously close to a form of authoritarian government which, for the want of a better term, they may call fascism.

The weakness of the Senate Small Business Committee lies in the fact that it has to some extent lost the confidence of the



eorge F. Meredith



lames A. Tawney

smaller business men. It has been functioning for several years, has held many hearings, and has issued many statements, but the totality of its work has done little to benefit the smaller business man except to supply him with elaborately detailed reports and studies, issued in nice pamphlets which have been bountifully scattered around the country.

Unfortunately the troubles of the smaller business man needed more help than printed studies. The subcommittee making the steel investigation apparently is sincere and capable and seeks to do something practical and constructive. But the smaller business man does not realize this is true, and therefore thus far has not rallied in support with its active manifestations of approval and aid.

#### Freight Car Shortage

This steel problem ties in closely with the shortage of freight cars which has been under scrutiny in a series of meetings held by the Congressional delegations from the Western states. Senator Clyde Reed, Kansas, recently told the Senate the railroads over-all have 1,700,000 freight cars of all types and descriptions. He said it will require the monthly production of 10,000 freight cars for at least 24 months, possibly 30 months, to relieve the acute shortage.

Major steel producers recently met with Congressional committees and agreed to supply a minimum of 2,500,000 tons steel per year to enable the builders to construct the required 10,000 cars monthly during the next two or more years. The significance of this volume of shapes and plates may be more clearly understood by reference to the fact that the emergency housing program absorbed only 1,200,000 tons annually, and acutely restricted supplies of hot rolled steel for all other purposes. Use of stainless steel in freight cars also increased production of this type of metal between three and five per cent.

#### Grand Jury Investigation

The freight car shortages prompted the Department of Justice to initiate a federal grand jury investigation in the District of Columbia to determine whether or not freight car building companies, and others, have violated the anti-trust laws by acting in collusion to restrict building, and to control the distribution of available freight cars, as charged by the FBI. The Attorney General declared that four freight car building companies have in recent years secured approximately 80 per cent of the freight car building business, and that the Association of American Railroads controlled the distribution of the freight cars.

At the caucus of the Western Congressional delegations, former Assistant Attorney General Wendell Berge charged the acute shortage in the West results from the "desire of Eastern railroads and their industrial and financial allies to preserve the West as a source of raw materials for Eastern fabricators." Berge urged that

Congress enact laws restricting the powers of the Association of American Railroads.

Director J. Monroe Johnson, of the Office of Defense Transportation (which still functions), appeared before the caucus to deny that the West received less freight cars than any other section. Apparently, however, Colonel Johnson had in mind the wheat crop of the Southwest, rather than the needs of the states of the Pacific Slope. It seems probable, on the other hand, that this enquiry, which was entirely unofficial, will bear fruit in bringing more freight cars West.

It may interest you to learn that some of the shortage of steel is reported to have been aggravated by the failure of the Russians to come to cases in agreeing to a settlement of the future of Germany. Apparently the restoration of the steel production of Germany is badly needed. This source hitherto has supplied most of the steel for Europe.

#### Steel to Stop Russia

It is assumed we now must supply the steel which is needed in Europe and elsewhere to stop Russia. The steel people in this country report they will not engage in any export business, except by Government commitments, until next year. But, in 1948 they plan to send across the oceans at least four times as much steel as has ever gone out of America into foreign ports in any other year of peace.

The British, French, Russians, Polish, Mexicans, and other South Americans are expected to take at least 15,000,000 tons annually. This pace is expected to keep up until 1952 or 1953, when steel plants on a very large scale are expected to be operating in Brazil, Australia, Chile, Holland, and Norway.

It is interesting to us here that James A. Tawney, clerk of the House Ways and Means Committee (one of the most powerful, if not the most powerful single committee in Congress), is considered one of the most competently informed students of the Tariff on the Hill. Jim Tawney came here from San Francisco, where he was identified with Columbia Steel. If you wish to really find your way through the mazes of the intricate tariff schedules, you go to Jim Tawney.

#### A Tariff Background

He comes by it naturally. This correspondent remembers when Jim's father, also James A. Tawney, was one of the most distinguished members of the Congress, and also was widely noted for his expert knowledge of the tariff schedules. Congressman Tawney, under the leadership of colorful "Uncle" Joe Cannon, then Speaker of the House, was the champion largely responsible for the enactment of the Payne-Aldrich Tariff Act, one of the milestones in American tariff legislation. Our Jim has been an editor and reporter, on the Associated Press, in St. Paul and Chi-

cago; studied law and practiced law in Michigan; and has had various connections with the RFC, the Alien Property Custodian, and the National Park Board. He was graduated from Northwestern University.

#### Hoover's Influence

By and large the Republican Senators don't like it, but the fact remains that the Sage of Palo Alto, Herbert Hoover, increasingly looms in the capital as the national figure with the most powerful influence upon thinking about affairs, national and international. Both Democrats and Republicans wait for the cue from him. He is practical and speaks with wisdom and sincerity. No one imputes self-interest to his suggestions.

The Republican Senators profess to fear that the people are afraid of him because he made an indifferent president. They don't seem to understand that the "elder statesman" and the former President are two different personalities in the public mind. Or, perhaps, they are afraid of his influence and are starting early to head him off. Neither Vanderberg nor Taft ever have been friendly to Hoover.

## **Exchange Parts Service Growing**

Engine and parts exchange service for large truck fleets in the West is gaining continually wider acceptance because of the reduction in "out of service" time and the need for stand-by equipment.

The war, when new equipment was not available, and the trend toward larger trucks are largely responsible for this development, by which an exchange part is substituted and the truck set rolling again with a minimum of delay, while the repair work can be done later. One of the big advantages is the elimination of high-cost "emergency" jobs when the whole maintenance crew had to drop everything and jump to the rush job.

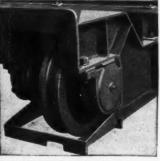
#### New Production Records at Fontana

New production records were made in May at the Fontana steel mill. Output of steel ingots was 68,318 tons; previous top was 64,454 tons in March. The blast furnace turned out 41,529 tons of pig iron, as against the previous high of 38,291 tons.

The 36-inch blooming mill produced 53,235 tons and the 29-inch mill 29,060 tons, as compared to the best earlier marks of 49,092 and 28,075 tons, respectively. Merchant mill tonnage was 16,584 tons against the record high of 16,329 tons in April

To help meet these figures the company's mine at Vulcan had an output of 115,734 tons of ore, 22,506 tons higher than in any previous month. GENUINE MCB
END TRUCKS
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They Reduce and Simplify Maintenance!



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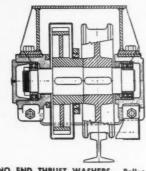
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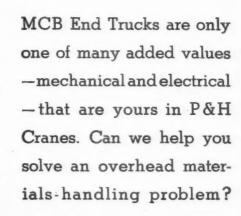
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1947

 EASIER WHEEL REMOVAL due to true MCB design. Simply drive wedges under end truck to relieve wheel of its load no jacking up.



2. NO END THRUST WASHERS. Roller bearings take end thrust loads as well as radial loads and eliminate troublesome thrust washers.





3. DOUBLE WEB BOX CONSTRUCTION provides greater lateral stability. Heavy bearing seats, rigidly reinforced, take all impacts from starting and stopping.



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# WESTERNERS AT WORK...

#### Arizona

G. Hamilton Beasley, formerly of Huntington, Ind., named gen. mgr. of Aviola Radio Corp., Phoenix.

L. W. Stringer, Salt Lake City, appointed gen. mgr. of the Phoenix plant of Cudahy Packing Co., and James Minotto, former head of Mission Dairy, appointed asst. to the president.

#### California

#### Transportation

Northrop Aircraft, Inc., appoints vice-chairman Richard W. Millar, chairman, succeeding La Motte T. Cohu. Claude N. Monson becomes gen. mgr., B. G. Reed, asst. gen. mgr. and Gage H. Irving, pres. of Salsbury Motors, Inc., Northrop subsidiary. . . .

California Eastern Airways appoints H. F. Johnson controller and treas. . . .

Airquipment Co., Burbank, elected B. W. de Guichard, pres.; C. P. Turner, v.p.; N. R. Smith, v.p.; Frank L. Frain, sec.-treas. . . .

#### Shipping

Lewis A. Lapham, son of San Francisco Mayor Roger D. Lapham, named pres. of American-Hawaiian S.S. Co., succeeding John E. Cushing. Fred A. Hooper retires as mgr. of the Los Angeles office of the company. . . .

American President Lines appoints W. T. Goodwin as asst. to the v.p., in charge of the

Thomas E. Cuffe, former exec. v.p., named pres., Pacific Far East Line, Inc., succeeding William T. Sexton, resigned to give full time to Coastwise Pacific Lines. John A. McCone, pres. of Joshua Hendy Iron Works, replaces Sexton as director. . . .

Louis B. Lundborg, gen. mgr., San Francisco C of C, appointed to special national committee on the development of the U. S. Merchant Marine. . . .

Robert A. Ericksen, Berkeley, appointed terminal supt. for the Port of Oakland at the outer harbor terminal. . . .

#### Leaders

The California State C of C elected: Harry A. Mitchell, San Francisco, v.p. and gen. mgr., Western Pacific Railroad Co., pres.; James E. Shelton, Los Angeles, pres. Security-First Na-



Shelton

Mitchell

tional Bank, first v.p.; Adrien J. Falk, San Francisco, pres., S&W Fine Foods, Inc., second v.p.; Frank P. Doherty, Los Angeles, atty., third v.p.; Asa V. Call, Los Angeles, pres. Pacific Mutual Life Ins. Co., treas.

Lloyd A. Johnson, pres. of National Motor Bearing Co., Redwood City, Calif., elected pres. of the California Manufacturers Ass'n. . . .



Turkington

Johnson

Edward L. Turkington, formerly pres. of Healy-Tibbitts Co., San Francisco, appointed asst. gen. mgr. of the San Francisco Bay Area Council.

Brayton Wilbur, chairman of Wilbur-Ellis Co., and former pres. of the San Francisco C of C, appointed by the Board of Governors of the Federal Reserve System as chairman of the board and Federal Reserve agt. of the Federal Reserve Bank of San Francisco, succeeding Henry F. Grady, resigned to become first U. S. ambassador to India. . . .

Earl O. Shreve, formerly mgr. of General Electric's San Francisco office, elected pres. of U. S. Chamber of Commerce, Washington, D.C.

Leonard M. Kearns appointed business consultant for the U. S. Department of Commerce in the Los Angeles area, . . .

O. C. Hansen, managing partner, Frazer & Hansen, Ltd., San Francisco, appointed chairman of the International Trade Sub-committee of the Small Business Advisory Committee, Washington, D. C. . . .

#### Foods

Leonard L. Born resigns as production mgr. of the Guggenhime div. (dried foods), Hunt Foods, Inc.

#### Lumber

William R. Morris, former mgr. of eastern offices of Union Lumber Co., named v.p. and gen. sales mgr. with offices in San Francico.

#### Manufacturers

Reese B. Lloyd, mgr. of Rheem Mfg. Co.'s largest Chicago plant, named mgr. of the company's Western plants with headquarters in Los Angeles.

J. H. Kirk, general mgr. of Southern Pacific Milling Co., at San Luis Obispo, resigns to go into business for himself in a retail yard venture with Ernie Sanders, former yard mgr. for S. P. Milling Co. . . .

Ward Rineman, former mfg. engr. for Lockheed Aircraft Co., becomes a commissioner on the Construction Industries Dept. staff of the Los Angeles C of C.

Plomb Tool Co., Los Angeles, appoints R. W. Kerr, formerly v.p. and treas., exec. v.p. H. C. Baumgartner, formerly sec. and comptroller, becomes sec. and treas.

Reese B. Lloyd named mgr. of Rheem Manufacturing Co.'s Western plants. He formerly managed the Chicago plant. . . .

William J. Ritchie appointed sales mgr. for the Western div. of Evans Products Co. . . .

Edward J. Raves promoted from chief inspector to supt. at Grove Regulator Co., Emeryville. . . .

Albert C. Beeson, formerly with National Union Radio Corporation, Newark, N. J., named director of industrial relations for Food Machinery Corporation, San Jose, succeeding Glenn A. Bowers. . . .



Beeton

Lyman D. Wilbur, formerly district mgr. in charge of Morrison-Knudsen Co.'s southwestem U. S. operations with headquarters in Los Angeles, elected chief engr. succeeding C. P. Dunn, now gen. mgr. of foreign operations. Succeeding Wilbur is J. N. Wells, formerly asst. district manager. . . . .

#### Utilities

William G. B. Euler, v.p. of Pacific Gas & Electric Co., San Francisco, in charge of operations, becomes v.p. and gen. mgr. of the company, succeeding A. Emory Wishon who becomes exec. v.p. R. E. Fisher, v.p. in charge of public relations and sales, retires, succeeded by Norman R. Sutherland. Dunlap D. Smalley, engr. of electric operation, succeeds Euler. James S. Moulton and I. C. Steele appointed vice-presidents. . . .

#### Oil

Thomas C. Moroney elected sec., Honolulu Oil Corp., succeeding Robert H. Wright who remains v.p., . . . .

Standard of California appoints W. A. Eardley chief petroleum engr., San Francisco, succeeding E. G. Gaylord, elected a v.p. and director of California Research Corp. W. L. Ingraham appointed to the newly-created position of asst. coordinator of personnel development.

General Petroleum Corp. names J. W. Templeton assistant to director of production; W. C. Lynch as asst. mgr. of industrial relations; and W. D. Joiner, Jr., is mgr. of the personnel department. . . .

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W. J. O'Connor, formerly chief clerk, made supt. of the middle division of the Colorado & Wyoming Ry., Pueblo. . . .

Ellis P. Starbuck of Greeley named district mgr. in northern Colorado and Cheyenne for the Boise Payette Lumber Co., succeeding John E Philpott, resigned. . . .

Fred W. Lake of Denver, pres. of Colorado Milling and Elevator Co., and John D. Walker, gen. mgr. of the Colorado & Southern Ry., named directors of the C. & S. Railway. . . .

Ralph W. Adkins, civil engr. for CF&I, appointed engr. in charge of the outside plant water system at Pueblo.

Charles Salit, Colorado Beverage Co. head, Denver, retires; succeeded by Willard L. Ball.

James D. Maitland of Colorado Builders Supply Co., Denver, named v.p. of the Steel Joist Institute. . . .

Dr. F. A. Rohrman, head of the dept. of chemical engr. at Kansas State College, appointed exec. director of the engr. experiment station at the U. of Colorado, and research prof. of chemical engr., succeeding Dr. Carl Borgmann, who joins the U. of Nebraska as dean of the faculties. . . .

#### Idaho



Idaho Mining Association elected J. B. Haffner, pres.; A. H. Shoemaker, v.p.; Harry W. Marsh, sec.; Wallace G. Woolf, chairman of the executive committee; Henry L. Day, Tom C. Russell, Harold G. Bailey, and J. E. Berg, members of the committee.

Haffne

Independence Lead Mines Co., Wallace, elected: W. E. Cullen, pres.; L. J. Hopkins, v.p.; F. W. Kiesling, sec., and W. E. Cullen, Jr., asst. sec.-treas. Other new directors are P. R. Simpson, Kellogg, and H. J. Hull, Wallace.

Harry A. Elcock of Twin Falls, Idaho, div. mgr. for Amalgamated Sugar Co., elected pres. of the Idaho State C of C, succeeding R. S. Erb, retiring.

#### Montana

Arthur Tuchscherer of Anaconda elected pies. of the Montana Bottlers of Carbonated Beverages, Inc., succeeding W. W. Cassel of Havre. Nels Solander of Missoula named v.p.

Walter H. Jensen, formerly mgr., elected pres. of Sicks' Great Falls Breweries, Inc., succeeding Emil Sick, Seattle, pres. of the Sick Corp., who becomes chairman of the board. C. O. Johnson named mgr. . . .

#### Nevada

Robert Z. Hawkins, Reno attorney, elected sec. and treas. of the Mission Corp.

#### Oregon

Frank V. Percival, former asst. supt. of the Spokane div., appointed supt. of the Great

Northern railway's Klamath div. with headquarters at Klamath Falls. . . .

The Technical Assoc. of Pulp and Paper Industries, Pacific section, awarded the annual Kenneth Shibley memorial award to Conrad E. Dyar of Port Angeles, who is with Rayonier, Inc. . . . .

Carl Hildman, Eugene, appointed logging engr. in the div. of timber management in Portland, U. S. Forest Service, succeeding Paul Logan, promoted to a regional staff post at Missoula, Mont. . . .

Arthur Morgans, formerly auditor of the West Coast Lumbermen's Assoc., joins the Willamette Valley Lumber Co. and associated companies as chief auditor. . . .

William J. Ritchie appointed sales mgr. for the western div. of Evans Products Co., Plymouth, Michigan. . . .

R. H. Spear of Gunderson Bros. Engr. Corp., elected pres. of the Portland council, Controllers' Institute of America.

Saxton B. Ferrell joins Pope & Talbot, Inc., lumber div., as gen. sales mgr., with headquarters at Portland. . . .

John H. Burgard resigns as chairman of the Portland commission of public docks, succeeded by Chester A. Moores, realtor and expres. of the Portland C of C. . . .

Paul B. McKee continues as pres. of Pacific Power & Light Co., which became consolidated with Northwestern Electric Co. L. T. Merwin, Northwestern pres. and T. E. Roach, v.p. and gen. mgr., elected Pacific Power v.p.'s. R. W. Lawlor, asst. sec.-treas. of Northwestern, named asst. sec. of Pacific. . . .

Lloyd Thorpe has been named field secretary for the Western Forest Industries Ass'n., with headquarters in Portland. . . .

#### Utah

Park Utah Consolidated Mines elected J. William Stoner, Salt Lake City, a director. . . .

Walter Mathesius, pres. of Geneva Steel Co., Utah subsidiary of U. S. Steel Corp., elected a director of U. S. Steel Corp. of Delaware. . . .

Orson W. Kasteler, purchasing agent for Lang Co., Salt Lake City, elected pres. of the Purchasing Agents Ass'n of Utah, succeeding Herbert Weindell. . . .

#### Washington

L. G. Knight, mgr. of purchases and traffic, Seattle and Portland district, Bethlehem Pacific Coast Steel Corp., is representing the American steel industry in a survey tour of steel scrap accumulation in the Pacific islands of Guam, Manus and Okinawa, and at Manila in the Philippines. . . .

R. B. Moran appointed mgr. of Asbestos Supply Co. of Spokane, replacing J. B. Lyall who continues as mgr. of Northwest Insulations Company....

L. E. Karrer, former v.p., appointed exec. v.p. of Puget Sound Power & Light Co., Seattle.

A. K. Lowe appointed purchasing agent of Young Iron Works, Seattle, succeeding William R. Lindersmith. . . .





Collins

Wells

W. W. Rutledge, experimental production mgr., appointed asst. to Fred P. Laudan, v.p. in charge of experimental mfg., Boeing Aircraft Co., Seattle. Frederick B. Collins and Edward C. Wells elected vice-presidents....

Railway Express Agency at Spokane appoints R. M. Ball of Great Falls, Mont., gen. agt., succeeding A. H. Peterson, retired. . . .

The Western Blower Co., Seattle, elect: J. Ebbe Jensen, pres.; F. W. McCullough, v.p.; and M. W. Ruelle, sec.-treas. . . .

W. C. Eardley, pres. of the Eardley Fish & Fillet Co., Seattle, and Howard L. Scott, v.p. Pacific American Fisheries, S. Bellingham, appointed by the Dept. of Agriculture to a fish advisory committee. . . .

Seton H. Thompson appointed chief of the div. of Alaska fisheries of the U. S. Fish & Wildlife Service, succeeding Ward T. Bower, resigned. . . .

Gus Nieman appointed pres. and gen. mgr. of the Inland Motor Freight Co., Spokane, succeeding the late Grover C. Ealy. . . .

John T. Kiley, asst. to the pres. of the Milwaukee Road in Seattle, elected a v.p. of the railroad. . . .

Harlan Peyton, Spokane, pres. of the Assoc. of Chambers of Commerce of Washington, elected U. S. Chamber representative for district No. 10 comprising Washington, Oregon and California. . . .

H. M. Buckner promoted to gen. supt. in charge of factory operations of the Northwest Door Co. of Tacoma. . . .

Ralph M. Roberg of Bellingham elected pres. of the Assoc. of Washington Industries, succeeding Ferdinand Schmitz, Jr., Seattle. . . .

Dr. W. F. Thompson, director of the U. of Washington's school of fisheries, resigns to head a fisheries research institute to be established by the University in cooperation with the Alaska Salmon Industry, Inc. Dr. Wilbert M. Chapman succeeds Thompson. . . .

J. Edgar Green elected treas. of Preservative Paint Co., Seattle. . . .

#### Wyoming

Howard C. Anderson appointed director of the Wyoming state commerce and industry commission. C. D. Williamson of Hanna is chairman. . . .

(Continued on page 56)

# WESTERNERS AT WORK..

(Continued from page 55)

#### **Associations Elect**

B. M. Doolin, mgr. of San Francisco's International Airport, elected third v.p. of the American Assoc. of Airport Executives. . . .

Virgil J. Rankin, San Francisco public relations consultant, elected pres. of the American Council on Public Relations.

Robert B. Gutsch of the aaRBee Plastic Co., Los Angeles elected to the board of directors as Pacific Coast section representative of the Society of the Plastics Industry....

American Marketing Ass'n appoints Robert C. Story, Seattle Chamber of Commerce, Seattle, as chairman of the inter-chapter relations committee. . . .

Douglas Fir Export Co. elects new officers: L. E. Force, pres. and general mgr.; G. Arch Kingsley, Kingsley Lumber Co., Portland, v.p.; Corydon Wagner, St. Paul & Tacoma Lumber Co., Tacoma, v.p.; W. B. Nettleton, Nettleton Timber Co., Seattle, sec.-treas. . . .

The Northern Calif. Section of the American Society of Lubricating Engineers has been organized with Wilbur Deutsch, San Francisco, as chairman and L. W. McLennan, Union Oil Co., Oleum, as sec.-treas. . . .

Southern Calif. chapter, American Foundrymen's Ass'n elects Henry E. Russill, Eld Metal Co., Ltd., pres.; L. O. Hofstetter, Brumley-Donaldson Co., v.p.; Earle Shoemaker, Kay-

Brunner Steel Products, Inc., treas.; and John Wilson, metallurgical engineer, sec. . . .

F. Ellis Johnson, dean of engineering at University of Wisconsin, named by General Electric Co. to set up advanced atomic energy education in cooperation with nation's universities. His position, full-time, will be in connection with Hanford. Wash., plant.

L. J. Kidd, export and import agt. for the Milwaukee Road, Seattle, appointed gen. agt., freight dept., succeeding George R. Webster, to represent traffic dept. at Missoula. F. W. Watkins, div. freight and passenger agt., Aberdeen, becomes export agt., Seattle. V. E. Strauss, traveling freight and passenger agt., Missoula, becomes div. freight agt., Tacoma, succeeding Harry Rowe, retiring. Harold D. Collingwood appointed div. freight and passenger agt., Aberdeen.

William R. Meenach promoted to foreign freight agt. for Great Northern R.R., Seattle, succeeding William R. Dale, retiring. W. E. Murray of Portland succeeds Meenach as asst. foreign freight agt. William S. Chemidlin also retires as dist. claim agt. in Seattle. . . .

Among those elected as national officers to head the new Forest Products Research Society at Madison, Wis., are: Bror L. Grondal, Seattle, Prof. of Forestry, U. of Wash., past organizational chairman; Edward G. Locke, Portland, chemical engr., U. S. Forest Service, Northwest reg. board member; and Robert A. Cockrell, Berkeley, Calif., assoc. prof. of forestry, U. of Cal., Southwest reg. board member.

New officers elected by the San Francisco chapter of the American Marketing Assoc. are: Prof. Charles J. Dirksen, Dean at the U. of Santa Clara, pres.; Burton S. Abbott, of C&H Sugar Corp., v.p.; Robert E. Baxter, of Facts Consolidated, v.p.; Lewis Forman, Western mgr. of National Analysts, Inc., sec.; and John R. Doxey, California Packing Corp., treas. Directors elected include: Richard Hilliard, pres. of Associated Steel Co. and Charles S. Hamman of Columbia Steel Co. . . .

Dave F. Smith, attorney, elected pres. of the M & M Assoc., Los Angeles. . . .

Pacific American Steamship Assoc. elected as new officers: pres., E. Russell Lutz, exec. v.p. of American President Lines; exec. director, A. W. Gatov; v.p.'s, A. R. Lintner, pres., American Mail Lines; H. Lueddemann, v.p., Pope & Talbot, Inc.; R. J. Chandler, v.p., Matson Navigation Co.; Donald Watson, mgr., Weyerhaeuser Steamship Co.; K. C. Tripp, Pacific Coast mgr., Moore-McCormack Lines; and sec.-treas., Henrietta T. Smith. . . .

Recently founded Western Wool Handlers Assoc. elected S. Grover Rich, Salt Lake City, pres., and R. C. Elliott, sec.-treas. Directors named are: Rich, Elliott; Haroold G. Russell, James M. Coon and Roy A. Ward, of Portland; Milton S. Theller and Lorin Tyron, San Francisco; and Russell Wikins, Denver.

Latest chapter of the American Foundrymen's Assoc. is located in Denver. Officers of this Rocky Mountain chapter, all of Denver, are; J. L. Higson, partner, Western Foundry, chairman; W. R. Manske, works mgr., American Manganese Steel Div., American Brake Shoe Co., vice-chairman; C. E. Stull, mgr., Manufacturers Foundry Corp., sec., and J. W. Horner, v.p., Slack-Horner Brass Mfg. Co., treas. Directors are: R. A. Bolen, pres., Bolen



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Míg. Co., Grand Junction, Colo.; Jack Carter, works mgr., American Foundry & Machine Co., Salt Lake City; S. C. Cooke, Denver, sec-treas., U. S. Foundries, Inc.; B. E. Dixon, supt., Brake Shoe and Castings Div., American Brake Shoe Co.; C. C. Drake, supt., Griffin Wheel Co.; E. B. McPherson, pres., McPherson Corp., and P. M. Payne, v.p., Rotary Steel Castings Co.

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W J. Co., Sylvan J. Pauly of Deer Lodge, Mont., elected pres. of the National Wool Growers Assoc.

Franz Taylor, Albuquerque, elected pres. of the New Mexico Bottlers of Carbonated Bev-erages, succeeding Dale Campbell. Byron Brown, Roswell, elected v.p. and Bill Powell, Albuquerque, sec.-treas. New directors are: Clyde Oakes, Las Vegas, J. R. Alexander, Clovis, and Byron Brown. . . .

Northwest Packers & Growers, Inc., Port-land, name Henry G. Hohwiesner of Starr Paulus Bros. Packing Co., vp.; and directors, S. E. Lasselle, Portland Canning Co., Inc., W. J. Linfoot, United Growers, Inc., and M. J. Millett, Reid Murdoch & Co. . .

Arthur W. Towne, v.p. and mgr. of Blake, Moffit & Towne, elected pres. of the National Paper Trade Ass'n. . . .

Northwest Ass'n of Ice Industries elects Paul Henningsen, Portland, pres.; F. L. Croteau, Spokane, v.p.; F. L. Mallory, Tacoma, sectreas.; D. D. Stewart, Seattle, exec. sec. . . .

L. J. Nevraumont, personnel mgr. of Pacific Gas & Electric Co., elected pres. of the Cali-fornia Personnel Management Assoc., succeeding George V. Morris. . . .

National Door Manufacturers Assoc. elects: A. W. Olson, Missoula White Pine Co., Missoula, Mont., pres.

Willamette Valley Lumbermen's Assoc. names T. V. Larsen, Noti, Ore., v.p.; Frank A Graham, Jasper, Ore., treas.; and H. J. Cox, Eugene, Ore., sec.-mgr. Guy Haynes, Carlton, Ore., reelected pres. . . .

Northwest Advisory Board elects Ralph Benson, Portland, pres.; Harold Stoddard, Everett, Wash., v.p. and A. M. Cloninger, Longview, Wash., exec.-sec. . . .

Canners League of California elects: William H. Foster, Foster & Wood Canning Co., pres.; M. A. Clevenger, exec. v.p.; A. W. Eames, M. A. Clevenger, exec. v.p.; A. W. Eames, California Packing Corp., L. J. Taylor, Libby, McNeil & Libby, and W. S. Everts, v.-presidents; Sylvia Kempton, sec.; and R. J. Marsh,

Pacific Coast Section of the Society of the Plastics Industry elects as chairman R. B. Gutsch, pres. of aaRBee Plastic Co., Los Angeles, succeeding Robert A. Cooper, v.p. of Plastic Die & Tool Corp.

Karl L. Bues, San Francisco, Calif., elected to the board of directors of the American Society of Tool Engineers. . . .

O. R. Doerr, Pacific Gas & Electric Co., elected pres. of the San Francisco Sales Managers' Association. . . .

John M. Schlemmer, sales mgr., General Controls Co., Glendale, Calif., elected a director of the Refrigeration Equipment Manufacturers Association. He was the only Western officer elected.

Arthur Towne, v.p. and mgr. of Blake, Mof-fitt & Towne, elected pres. of the National Paper Trade Association. . . .

Western Frozen Food Processors Assoc. named: E. J. White, Sacramento Frosted Foods Co., pres.; J. R. Braden, Richmond-Chase Co., v.p.; Fred L. Kulper, Santa Clara Frosted Foods Co., treas.; and A. H. Harrison, San Francisco, sec.-managing director. . . .

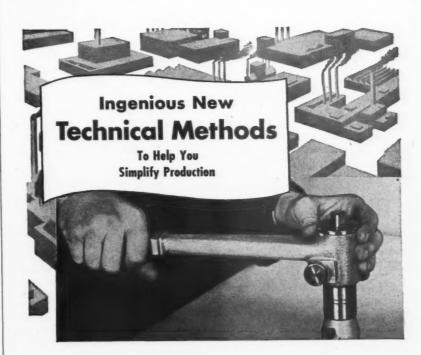
Irving Herts, ass't supt. of order and shipping dept., Colorado Fuel and Iron Corp., elected chairman Pueblo, Colo., group, American Society for Metals. . . .

Officers of the Pacific Northwest Plastics Association, recently formed at Seattle, include:
Robert H. Anderson, North West Plastics Industries, pres.; W. C. Lampert, Plastic Sales &
Service Co., v.p.; and Leo Livingston, Pacific Plastics Magazine, sec.-treas. . . .

Inland Empire branch of the Washington Purchasing Agents' Assoc. at Spokane elected: Carl E. Erickson, pres.; I. S. Fetterman, v.p.; T. A. Murphy, sec.-treas. . . .

Dr. George E. Felton, Hawaiian Pineapple Co., elected chairman of the Hawaiian section of the American Chemical Society succeeding Dr. Hugo P. Kortschak. . . .

Homer B. Jamison of Byles-Jamison Lumber Co., Fresno, Calif., has been elected president of the Western Pine Association. Other new officers are A. J. Glassow, Bend, Ore., and P. V. Burke, Sacramento, vice-presidents; A. C. Lighthall, Baker, Ore., treas.; C. L. Billings, Lewiston, Ida., and J. P. Hennessy, McCloud, Calif., directors at large. . . .



#### **New Type of Torque Tools Incorporate** Spring Clutch!... Are 98% Accurate!

Acme Torque Wrench and Screw Driver both incorporate spring clutches, with easily operated control. After setting control to desired torque, the operator merely turns tool in the usual way. When the torque required to drive the threaded part exceeds the pre-set value, the tool slips. Impact doesn't cause driving torque to increase. Oil doesn't affect setting which is reproducible within 2% or better.

The Wrench offers right and left-hand drive, ratchet action The Wrench offers right and left-hand drive, ratchet action and withdrawal. Spring clutch may be set from 0 to 500 inch pounds. Standard sockets are interchangeable. The Screw Driver may be set for any value of torque from 0 to 35 inch pounds. A ratchet action is incorporated. The same tool will also withdraw screws. Standard bits, including socket types, may be easily inserted. The tool is made of pressure cast aluminum.

Another Time-Saver on the job, is chewing gum. The act of chewing aids the workers' concentration—seems to make the work go easier. Chewing gum may be used even when workers' hands are busy; reducing interruptions from the job. For these reasons many plant owners have made Wrigley's Spearmint Gum available to everyone.

You can get complete information from Acme Scientific Company, 1450 W. Randolph St., Chicago 7, Ill.



Torque Screw Driver



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# Higher Wages, Low Living Costs Draw Workers to Southland

Real income rises 26% above 1939, prosperity reported beyond expectations, and in-migrants arrive 10,000 strong each month

Los ANGELES—The much-trumpeted climate of southern California may be only a secondary attraction to the thousands of people who continue to flock here each month, to the considerable dismay of harassed house hunters of the area.

According to a report just released by the U. S. Department of Commerce, the position of southland natives, whether by birth or adoption, is an enviable one.

Industrial workers in Los Angeles County, for instance, earn about 15 per cent more per week than the national average, despite the fact that the work-week here is slightly shorter than in the country as a whole.

In addition, dwellers in this industrial area enjoy the lowest living costs of any U. S. city of comparable size. Los Angeles recently was tied for 19th place among 33 large American cities, in terms of consumers' prices.

Result, says Dr. John Gaffey, the Commerce Department's regional economist and author of the report, which provides a striking panorama of post-war developments, is that real weekly earnings, after allowing for increased living costs, are now 26 per cent above the 1939 level.

The entire Pacific Southwest region, indeed, is prospering beyond most expectations. With 4.2 per cent of the total U. S. population, southern California and Arizona received 5.0 per cent of last year's national income.

A more striking comparison, however, is the fact that while the region's population has grown 38 per cent, its income is up 148 per cent.

#### Reconversion Hurdles Topped

"At best," Dr. Gaffey continues, "it was thought that the great war production centers might suffer severely in the first year or two after the end of active hostilities. No other area was considered more vulnerable to reconversion deflation than Los Angeles. . . . This area has topped its reconversion hurdles remarkably well.

"Total employment dropped only slightly following V-J Day. The labor force remained nearly constant for a short time and then began to increase again. Large numbers of persons, including many women, over-aged and teen-aged persons, left

#### REGIONAL REVIEW Tehachepi to Tijuana

the labor force; but the return of the war veterans and the heavy tide of in-migration here has more than offset them. By April of this year, the war-time peak had been passed and a new all-time high of nearly 1,560,000 was reached."

Scope of the "California-here-I-come" movement may be judged by State Department of Employment estimates setting net in-migration into Los Angeles County at about 10,000 persons per month, of whom about 4,000 enter the labor force.

#### Population Growing Faster Than Employment

Dr. Gaffey points out that although projected estimates of employment show expanding industries here will require more manpower within the next few months, population and the labor force now are growing considerably faster than employment. Local unemployment again is on the increase and in April was nearly 13 per cent. This figure makes a considerably poorer showing against the comparable national figure of about eight per cent.

Prosperity is somewhat spotty in the Southwest, Dr. Gaffey reports, revealing that though "retail sales throughout California are averaging about 22 per cent above last year's rate, San Diego and Long Beach, hardest hit by post-war deflation, show only about half this increase; yet many small growing communities show as much as twice the average. . . . Los Angeles figures are the same as the average for the state. . . . The showing on a per store or a per capita basis, however, is much less favorable than might appear from the dollar totals. . . . The eastern trade this year was disappointing in many lines and areas. . . . By March 31, southern California department stores had stocks 68 per cent greater than last year, while outstanding orders were 45 per cent less."

Though the implications of growing population and declining employment are unmistakable, Dr. Gaffey indicates that southern California still may hope to retain much of its war-time expansion.

In 1939, he says, "the Los Angeles industrial area was 11th in the nation in terms of number of production workers employed, but now it is tied approximately with Pittsburgh for sixth place.

"Though it has become the largest manufacturing area in the vast Pacific basin, it nevertheless has a smaller proportion of its labor force engaged in manufacturing than most large industrial centers."

Thus by its diversity of interests, its tourist attractions, its agricultural riches, and the fact that industrialization has not yet advanced to a stage comparable with the east, southern California apparently will continue to be an excellent market and has excellent long-range prospects for future growth.

Hoping to turn off some of the flood of immigration at the source, the Los Angeles City Council asked aid of all veterans' organizations in discouraging ex-GI's from visiting this area until the housing and unemployment problems are relieved. The Council said some 165,000 persons—mostly veterans — are seeking homes here now, and that 32,000 veterans are drawing weekly unemployment pay in Los Angeles, with job opportunities still shrinking.

#### Construction Bottlenecks Ease

Pipeline filling at last has begun to reach substantial proportions in the construction industry, with result that thousands of homes started as long ago as one year have been completed. Plumbing fixtures, one of the worst bottlenecks, are far more plentiful. Nevertheless it has been estimated by the Housing Expediter's office that if every dwelling unit completed throughout the entire nation during a single recent month could be obtained for California, the state would get a mere 11.5 per cent of its minimum city housing requirements.

Louis M. Dreeves, chairman of the Mayor's Emergency Housing Committee, reported that wage rate increases effective May 1 have raised construction costs about 26 cents a square foot on the average 1,000 square foot house in Los Angeles. It now takes from two to three months less time, he said, to build a house than it did at the start of the year, and residential con-



#### **Veedol Multi-Gear Lubricant**

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Good for all industrial purposes where gears are enclosed (except worm drives), Veedol Multi-Gear Lubricant permits you to cut lubricant inventories...saves you money. Pennsylvania base gear oil, plus a special, extreme-pressure additive, makes Veedol Multi-Gear a long-lasting, tough gear lubricant that combats wear... protects gears. SAE Grades 80, 90, 140, 250. Your Associated Representative will give you full details.

### **Veedol Trans-Gear Oil**

Highly recommended, where a compounded oil is not specified. Veedol Trans-Gear Oil is a rugged, wear-resisting gear oil. Economical, too. Made from 100% Pennsylvania base steam cylinder stock, a straight mineral oil. Special agent prevents foaming...retains its positive lubricating qualities in high-temperature usage. Users praise Veedol Trans-Gear's stability under severest industrial conditions. Grades 90, 140, 250.

Check these hard-hitting, money-saving lubricants against your specific needs.



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Fabco Flexible Couplings are not new. They have been in production for years and years and they are made in such quantities that they can be priced right. We can make them in quantities because they have a wide popular acceptance. Users like them and when they need more couplings they reorder FABCO FLEXIBLE COUPLINGS.

Fabco Couplings are carried in stock by representative dealers throughout the United States. They can usually supply any popular size right out of stock. If they are out, we can ship "same day" because we keep our bins well stocked. When you specify FABCO, you can depend upon good service on good couplings.

## F.A.B. MFG. (O.

1249 SIXTY-SEVENTH STREET OAKLAND 8 · CALIFORNIA struction costs have dropped from five to six per cent within the past 60 days. The "standard house" used as basis for these computations still would cost \$9.70 a square foot — a figure which is having the expected effect of discouraging most home builders.

New homes were being completed during the first four months of this year at an average rate of more than 200 per day. Starts, however, have been fewer, so the backlog of dwellings under construction is being reduced.

#### Buyer's Market for Steel Users

Welcome words to long-suffering users of steel were the remarks of Walter S. Doxsey, president, to fellow members of the American Steel Warehouse Association here:

"The market is changing from a seller's to a buyer's."

Doxsey told the delegates that they would have to cut their costs and prepare for a competitive market — a statement that fell gratefully on the ears of local manufacturers who still were tingling with accounts of gangster tactics by fly-by-night dealers in the "grey market" in steel. Phoenix business men in particular have been disturbed about exorbitant demands made by speculators who have been offering sheet steel at fabulous prices.

Irrespective of such "bootleg" operations, the campaign by the Western States Council recently showed tangible money savings to Western manufacturers in the form of market price reductions on steel. Amounting to three to eight cents per pound on various types of sheet, and 23 cents on structural shapes, the price cuts reflect establishment of a truly local basing point price for local-made steel and elimination of "phantom freight" charges on outside shipments.

#### Commercial Lab Society Meets

The American Council of Commercial Laboratories, whose members employ some 2,000 of the nation scientists in consulting, testing, and development work, recently held its first meeting on the West Coast. Although climate may have been one factor in attracting the organization's members to Los Angeles, the event brought to notice the fact that wartime industrial growth has brought scientific methods into prominence in Western industry.

Dr. Roger W. Truesdail, chairman of the group's newly formed Western division, reports that the number of firms engaged in such work has continued to increase even since the war, while some eastern laboratories are considering opening branches here.

This business flourished mightily during the war, one reason being that the con-

sulting laboratory can supply the services of top-flight experts with latest and best scientific apparatus to the average smaller company which simply could not afford to maintain such a staff of its own.

It also has the advantage of being insulated from any prejudices and preconceptions company officials may have, its findings being completely objective. It is estimated that only 2,000 out of some 100,000 industrial businesses in the country have their own research facilities, yet small manufacturers are in direct competition with large companies which keep full time research staffs and invest heavily in product development.

The old bromide about this area's position as "Gateway to the Orient" has been irritatingly slow of realization. Turmoil in China, Britain's "empire preferences," and military controls in Japan and Korea, have delayed local trade with the Orient. Export-minded manufacturers have given more attention to market development in Latin America, where there are plenty of war-spent U. S. dollars waiting to return home in exchange for Uncle Sam's wares.

#### Aircraft Makers Lament Appropriations

Preliminary success of the Army Air Forces budget before the House appropriations committee failed to bring wide-spread rejoicing among aircraft makers. While many had expected some curtailment, even the sums asked for represent very lean years for the war giant. With the aircraft industry telling Congress that orders must be forthcoming for at least 5,000 planes if the industry is to be kept in sound condition, President Truman's 1948 budget provided for only 1,500.

Substantial commitments still are on the books of major companies representing possibly \$1,500,000,000, and money from prior budgets is earmarked to pay for them, but by 1949, many of these orders will have been completed. About that time, too, the airlines probably will have nearly all the planes they need until they have written off their heavy investments in present models.

Aircraft men are glum for another reson—the high "break-even" point of their huge companies. New labor costs have further raised this point. Lockheed, for example, just signed a two-year contract with the International Association of Machinists, which would assure two years of labor peace but will raise total labor costs about \$1,250,000 per year. Douglas, which has been laying off workers lately, has been facing a strike threat scheduled for June; but with a \$5,000,000 manufacturing loss on 20 big planes delivered during March and April, has been expecting union leaders to take these factors into account.

Total employment at Douglas plants is down from a war peak of 159,000 to a recent 25,000. The company, which built nearly 30,000 planes during war years, now has a backlog of only a few hundred craft.

With military budget rigidly fixed by Congress, the companies cannot expect additional money to be pumped in as production costs go up. Recent cost increases, on the contrary, simply mean that they can expect to build one-fourth to one-third fewer planes than had been contemplated at the time the military budgets first were proposed.

#### Pallet-Users Want Lower Return Rates

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Carriers should either make no charge for returning empty pallets, or handle them at a reduced rate. Such was the general recommendation of 43 Los Angeles firms in response to a Chamber of Commerce survey to determine the extent of interest in the use of pallets.

A majority of the firms also felt that carriers could cut costs by the use of pallets because of simplified handling and

time saved.

The Chamber sent out 445 questionnaires, and received replies from 47, of which 12 said they could not use pallets because of the nature of their business. Over half of the pallet-users found the sizes recommended by the U. S. Department of Commerce satisfactory, while the other firms listed 16 different sizes which they would require.

Thirty firms use pallets in their warehouses and 27 use them in their plants. Fourteen who use them in transportation have the pallets returned to them.

#### Research Planned For Wyoming Resources

A systematic research program aimed at developing Wyoming's natural resources and bringing new industries to the state has been planned by the state Commerce and Industry Department, to be carried out in individual localities in cooperation with the chambers of commerce.

A beginning has been made at Rawlins, where Department Manager Howard C. Anderson met with the chamber secretary to plan studies of the timber, wool and mineral resources of that area. He has scheduled similar meetings in communities over the entire state to lay the groundwork for the program,

#### San Franciscan Takes Prize

Warren T. Weiss, of the Pacific Gas & Electric Company, San Francisco, won fourth prize in the Fluorescent Fixture Design Competition, sponsored by Sylvania Electric Products, Inc., and devoted this year to schoolroom lighting. His prizewinning fixture contains two 100-watt

fluorescent lamps, and uses rotating shields on either side which permit it to be used as a direct or indirect lighting unit.

#### \$6,000 Research Fund

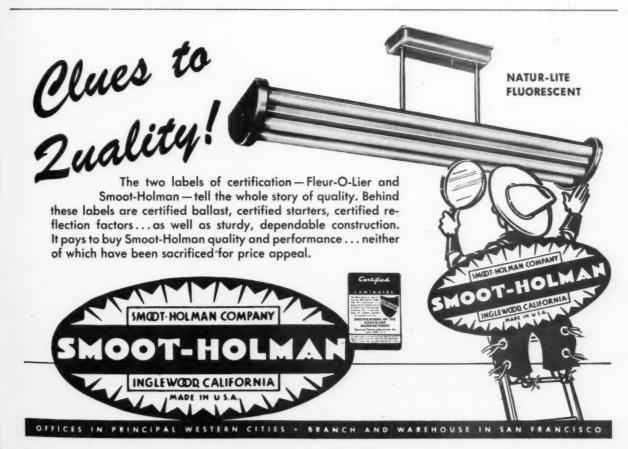
Repeating its grant of the last several years, the Corn Industries Research Foundation again has contributed \$6,000 to the plant nutrition division of the University of California College of Agriculture for basic experiments in starch chemistry, leading to industrial and agricultural applications.

#### Service Calls Get Push-Button Response

War-developed radio telephone has been adapted by the Payne Furnace Company, Beverly Hills, Calif., to give customers "push-button" response to their calls for service.

The "ship-to-shore" equipment is being installed in the company's service trucks to keep drivers in touch with the plant at all times. If a customer calls in for service, the service department just puts a truck operator on the job with a quick call.

Should the driver wish to call the main office, he need only push a "talk" button to get the mobile service operator who takes his number. Payne's first phone equipped service truck is already in operation, and facilities will be installed in the entire fleet shortly.



# "Guinea Pig" Tests on Getting Government Out of Land Owning

San Francisco Bay area hopes it will make more industrial development possible and lighten present heavy tax burdens

AN FRANCISCO—It is likely that the San Francisco Bay region will become a national "guinea pig" area for an impartial survey by the government to determine how much federally owned or leased land can be returned to private ownership.

This is for two reasons, in order to relieve the financial burden imposed on city and county governments by the removal of so much property from the tax rolls, and to give more opportunity for industrial development.

A survey conducted by the San Francisco Bay Area Council shows that the government owns about 76,210 acres with assessed valuation at \$65,398,903 in the nine Bay Area counties, and has leases on 2,197 acres. Improvements on the government-owned property total more than \$265,835,000. In Alameda County, which iacludes Oakland, Berkeley and Alameda, this amounts to approximately 10 per cent of the assessment rolls; in San Francisco it is estimated \$2,250,000 in tax revenue is lost because of government ownership of property.

A two-fold inquiry is under way in Washington to determine whether some of the property can be returned to private ownership, or if the cities and counties can obtain in-lieu payments from the government as is done by the Tennessee Valley Authority.

Representative Clair Engle of Red Bluff has introduced a bill in Congress to provide for the in lieu payments, and representatives of the County Supervisors Association of California have been attending committee hearings on this bill in Washington.

#### Benicia Arsenal May Be Abandoned

Meanwhile possible abandonment of the century-old Benicia Arsenal, as part of the Army's plan to concentrate its ordnance facilities in five major depots throughout the country, has aroused considerable excitement in the town of Benicia, which would thus be left with only one industry, the Yuba Manufacturing Co.

It is proposed to remove much of the equipment and personnel to Ogden, Utah, but in view of the fact that the arsenal is located on deep water and was greatly improved during the war, the San Fran-

#### REGIONAL REVIEW Sierras to the Sea

cisco Bay Area Council has been appealed to for an impartial investigation.

#### Employment Increase Since End of War

An increase in employment in seven out of 10 classifications of industry in the San Francisco Bay region in the 18-month period between the ending of the war in October, 1945, and February, 1947, is reported by the San Francisco Chamber of Commerce.

These seven groups and their percentage improvement are as follows: Food products, 15 per cent; textiles and apparel, 12 per cent; wood products and furniture, 8 per cent; rubber products, 2 per cent; paper products and printing, 12 per cent; chemical products, 8 per cent; miscellaneous, 21 per cent.

Metal products and machinery was the only classification of industry to show a sizable decrease. This was caused by the expected drop in shipyard operations.

Metropolitan Oakland area had a big month in reported plant expansions for May, totaling \$2,490,000, after a dip in April. Chief among these were Western Waxed Paper Co., a \$1,000,000 factory in San Leandro, a \$300,000 expansion for manufacturing fibreglass by Coast Mfg. & Supply Co. at Livermore, and \$200,000 by Aluminum Cooking Utensil Co. (subsidiary of Alcoa) for plant enlargement in Oakland.

One of the leading manufacturers of oil and air filters has stepped into the coast manufacturing picture by purchasing the plant near Pittsburgh used during the war by Arcrods Corporations to manufacture welding electrodes. This firm is the Fram Corporation of East Providence, R. I., who bought the establishment from War Assets Administration for \$123,849. The plant originally cost the government \$582,442. The other three bids were in the \$25,000 to \$50,000 range.

Modesto, historically a farming community, but now hoisting itself up by its own bootstraps in industrial development, instituted last month the first of a series of quarterly meetings on industrial development. Chief speaker was Louis Fox, manager of the industrial department of the San Francisco Chamber of Commerce, who recounted the northern California expansion of recent years and discussed some practical phases of industrial development.

Supplementing him in brief talks were Donald V. Doub, industrial engineer of the Pacific Gas & Electric Company, C. D. Lafferty and F. B. Stratton, industrial agents respectively of the Southern Pacific and Western Pacific, and A. C. Prendergast, editor of Western Industry.

Mr. Lafferty stressed the desirability of communities seeking new industries to have information readily available on the question of sewage, water supply, labor supply and attitude of unions. He also added a timely warning against industrial sites being located where highways may cut them from easy trackage access.

#### Improved Irrigation From Central Valley

Improved irrigation is the primary value to be derived from the \$384,000,000 Central Valley Project, according to James B. Black, president of the Pacific Gas & Electric Co., in his recent testimony before the U. S. Senate Appropriations Committee.

He pointed out that under the P.G.&E. proposals to purchase the Shasta Dam power outright at Shasta substation, the company would pay \$4,175,000 a year for power and in addition supply all of the power required for full operation of the pumps in the delta area where the Sacramento and San Joaquin rivers converge on an exchange basis.

Under the Reclamation Bureau's plan of spending \$41,000,000 for a transmission system of its own and \$26,000,000 for a steam plant, the net at Shasta substation would be only \$1,800,000 a year, a loss of \$2,375,000 a year.

Air freight recently was used to transport a new six-ton drive shaft from Moore Dry Dock Company in Oakland to a ship in the Panama Canal. The flight took 15 hours. The first plans on which the shaft was loaded developed engine trouble, so the shaft had to be lifted out by crane, deposited on a staging, then moved on rollers into the fuselage of the second plane.

The DRYOMATIC is an electrically operated dehumidifying unit, manu-factured in 3 models, each of which is entirely automatic in operation.

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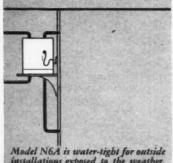
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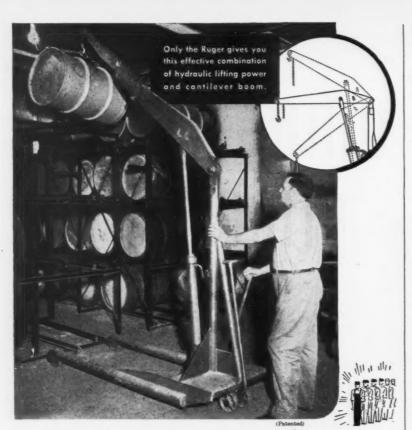
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Anyplace around the plant, wherever you need to pick up, elevate, carry, lower, stack, tier or otherwise maneuver heavy, bulky, awkward loads, one man with a Ruger Floor Crane will do as much work as a labor gang, and do it quicker and cheaper.

Boxes, barrels, bundles, crates, castings, dies, heavy parts, finished machines... anything that can be picked up by a crane hook can be handled by a Ruger.

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Anyone can operate a Ruger... only 2 controls, pump lever to raise boom and load, fine-threaded release valve to control the lowering. Three sizes, 1-ton, 2-ton and 3-ton all mounted on large diameter roller bearing wheels and casters.

Write for bulletin and prices to nearest address below.

Load Lifting and Handling Devices

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Cleveland 14, Ohio
Portland 8, Oregon

# Geneva Improves Pig Iron Production

An improvement of 37 per cent in pig iron production has taken place at the Geneva steel mill, as the result of changes in the use of coal. Where it formerly took 4,600 pounds to produce one net ton of pig iron, now it can be done with 2,900 pounds.

It is entirely possible that there is yet an unknown coal or other material, according to C. L. Waggoner, general superintendent, which when properly treated and blended with the presently known coals of the West would have the same effect on the Western economy that the blending of coals had on the Eastern economy.

Although the matter of suitable coking coal for Geneva is not completely disposed of, he told the Rocky Mountain Coal Mining Institute, coal whose quality had been looked upon with serious misgivings, has shown itself to be amenable to treatment. It now remains to develop the most economical method of producing a thoroughly suitable coke.

The tests which led to the present improvement proved that the lump portion of the run-of-mine production, almost without exception, produced better coke than the fine coal. Studies further indicated that, without change in hammer mill practice, the coarse coal invariably resulted in a greater weight per cubic foot of coal when charged in the oven.

This led to the surmise that an increase in the bulk density of the coal charge might of itself contribute to an improvement in the coke quality. This was later corroborated by results obtained when weather conditions were such that the coal density varied. The quality of the coke was inferior when coal of low bulk density was charged.

The coking problem at Geneva thus appeared to be one of reducing the amount of voids in the coal charge to improve cokability while at the same time supplying a deficiency of coking medium which is essential for the coking process. For this purpose the most economical material seemed to be pitch.

Examination of the coke had disclosed uncoked coal, indicating that an increase in coking temperature was advisable. Geneva officials were convinced that the fusion temperature of the coal ash was sufficiently high to allow an increase in coking temperatures without endangering the silica walls of the coke ovens. They were also convinced that it was impossible to improve the coke sufficiently by changing only one of the factors discussed, so as it became possible, they put into effect all of the changes contemplated. Consequently, oven temperatures were carefully increased, coal pulverizing practice was changed and pitch was added to the coal charge. The amount of pitch being added at the present time is 41/2 per cent.

#### Management Should Do the Training

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Today there is an epidemic in training similar to the so-called scientific management period after World War I which produced such a tremendous number of "efficiency experts," according to Alexander R. Heron, vice-president of Crown-Zellerbach Corporation.

During the depression there was a similar epidemic of interest in industrial relations, he told the California Training Directors Association at their first annual training conference at the Golden Gate College School of Management, San Francisco. The symptoms of that period were radical legislation and the production of a tremendous crop of industrial relations experts.

"Now we are seeing a similar epidemic in training," he said. "The immediate symptoms are training programs, training materials and training experts of all kinds. The basic danger lies in the fact that the job is being too readily assigned to experts, instead of shouldered by management.

"When we attempt to do the training job through experts, we weaken the line management, and discount the ultimate value of the training. When we utilize the best available experts as supervisors, planners and needlers, with the object of helping and encouraging top management to do a better job in its own field, we have taken the safe course."

#### West Has the Newer Plants

Average age of all manufacturing plants, mills and factories in the Far West is 15 years. Average for the rest of the country is: New England, 60 years; Philadelphia, New York and Baltimore, 52 years; Chicago, Detroit and Cleveland, 25 years. Average for the entire country is 40 years.

## Coast-wide Shipyard Agreement Completed

Shipyard operators and AFL unions on the Pacific Coast have completed their first coast-wide master agreement. Heretofore such agreements have been with local metal trades councils.

The occasion also marked the retirement of the government from participation in such negotiations. Government agencies had been active participants in the war period.

Mechanics getting over \$1.54 got a 13c increase in wages, while all those below that figure got an 8½ per cent advance, an arrangement that eliminated some inequalities. Two weeks vacation after five years was a new provision added to the master agreement.



California's Industrial development before and during the war has become permanent growth—the post-war trend is upward! We are going places in a big way! . . . in industry, payrolls, population and markets.

Immediately after wartime building restrictions were lifted, P.G. and E. began to provide increased service for Northern and Central California to meet new and increased demands for gas and electricity and to build well abead of anticipated growth. In 1946 approximately \$45,000,000 was spent toward that end. AND NOW a comprehensive 5-year expansion program has been developed calling for the expenditure of an additional \$300,000,000 by the end of 1951.

New power plants will be constructed and others enlarged, adding about 1,000,000 horsepower to P.G. and E.'s power capacity. Also included in the program is a vast systemwide expansion of transmission and distribution facilities.

P.G. and G. will be fully ready to help Northern and Central California grow during the busy years ahead with a power capacity of more than 3,500,000 horsepower.

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PACIFIC GAS AND ELECTRIC COMPANY

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# Colorado Looks for Good Times After Political Housecleaning

Construction projects humming; crops look good; mining prospects brighten with government stock-piling plans; tourist business prepares for throng

ENVER — There's a fresh breeze blowing through the high places and prairies that look to Denver as the source and center of all things good or bad. With the election of clean, vigorous young Quigg Newton as mayor of Denver the sparks have been flying. Nearly every field of endeavor has felt some effect from the housecleaning taking place in and around Denver's Civic Center.

There is a brand new governor in Colorado, too, and the change there was decidedly for the better from the point of view of all those who want the West to be up and doing things. The do-nothing policy that has characterized both the Colorado state house and Denver's city hall for years suddenly has ended. It is about time.

Building. Those who were ready to start building homes like crazy are sitting this one out, waiting for construction costs to drop to more sensible levels. But in every other phase of activity, including major construction projects running into the hundreds of millions for the area tributary to Denver, those with the money to spend are spending it and expressing high glee that at last the dough is rolling out.

Exceptions are rare enough to deserve special mention. One is the downtown campus building program of the University of Denver, which has been postponed until costs are more favorable. But for one like that which has been delayed, there are dozens of equal or larger size that are being pushed full tilt and will be hurried to completion in the months ahead regardless of what it may cost those footing the bills.

Bright Spot. There can't help being a bright spot on the economic map of America during the summer and fall, and the bright spot will be the high country up and down the Continental Divide. The area's basic industry — agriculture — is in disgustingly healthy condition, with none of the major setbacks that have been plaguing farmers in other parts of the country.

Mining is perking up with good news about stock-piling programs of the government and improving profits on the side of the precious metals producers. The tourist business this year is getting out the "Standing Room Only" sign and that inREGIONAL REVIEW
The Continental Divide

flux of ready cash will help every aspect of business.

By & By. To other factors favoring good times in the Rocky Mountain area during the next four or five months, add the usual time-lag of three to six months that has been mentioned frequently in these columns. It starts to get dark in New York while it is still sunny in Denver; similarly, there is a delay in economic trends that sweep the country from the industrialized seaboard areas to the well-insulated hinterlands, of which the Rocky Mountain region is the point farthest back.

Right now, when stores in most places are complaining that the customers are staying away in droves, Denver retailers are still going full tilt with only the first glimmerings of a buyer's market beginning to show up. Likewise, the employment figures show a lot of people out of work in most areas but not so in the Rockies, yet. Any index you choose shows the same picture — bank clearings, freight car loadings, what-have-you.

Not only is there an absolutely chartable time lag, but also a diminishing impact as the economic waves travel inland. What amounts to a smashing tidal wave of sentiment or buying habit on the eastern seaboard may peter out to a mere ripple by the time it gets to the Rocky Mountains. This now is becoming apparent to politicians (journalists and public opinion pollsters have understood it for years) and gradually business and industry will adjust to the time-lag factor. If played right, fortunes could be made by "riding" it.

Hamstrung. Republican members of Congress who slashed appropriations for everything the government does, including projects and services of special value to the West's farmers, businessmen and industries, apparently guessed right. The agencies and a few of their friends set up a howl of protest which was echoed briefly by most of the newspapers of the area, but the objections led to little organized opposition to the slashes.

Public apathy to the consequences was what the economy-minded Republicans

had hoped for, and so the agencies have been emasculated and the Republicans can go to the voters at the next election and say, "See, we saved you a lot of money!"

It is too early to tell how seriously the West will be hurt by the curtailment of services in the various federal agencies. At any rate, the Republicans got away with their promised budget cuts and in spite of a little sabre-rattling the West didn't go to war over the matter.

Teapot Dome. They say a big man will change his mind and admit it. The people who formulate the policy of the U. S. Navy with regard to its oil reserves must be big. They changed their mind about the possible value of the famous Teapot Dome reserve in Wyoming, adjoining the extremely productive Salt Creek oil field. How it came about makes quite a story.

While thumbing through a bulky government report on the nation's petroleum resources, the editor of the Oil Reporter, Denver oil journal that takes a bullish attitude on anything pertaining to the mountain states, noticed some references to Teapot Dome. On closer reading, it was seen that the Navy's director of petroleum reserves had asserted flatly that the Navy no longer wants the Teapot Dome reserve and would offer no objections to its return to the Department of the Interior.

Realizing that this would mean the Teapot Dome reserve could be opened up for leasing and that it is a promising spot for deep drilling, the Oil Reporter screamed the news. It demanded early action on the proposed transfer, in order that private operators might have an opportunity to lease the land and take their chances on opening up "another Rangely field or Elk Basin" by finding oil deep under Teapot Dome.

Evidently the Department of the Interior was in no hurry to take over the hot potato, which had figured prominently in the scandal of the '20s that had sent the Department's Secretary Albert B. Fall into disgrace and retirement and had put some of the nation's leading oil operators in prison for a brief term.

Still the Denver oil paper kept up its howl for action on the proposed transfer so that the deep test it had suggested could be made. Then came an unexpected break. The Oil Reporter discovered that the Navy



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Add together the savings in initial equipment cost, operating expense and maintenance charges obtainable with Dravo Heaters and you have gone a long way in helping to offset the unusually high cost of building today.

And Dravo Counterflo Heaters have other money saving advantages too: the interchangeability of gas burners with oil burners; the combination gas-oil burning arrangement available at purchaser's option; the large capacities ranging upward from 400,000 Btu output; control and fan systems arranged for summer ventilating service; stainless steel chamber for extra long life.

Since Dravo Heaters are available immediately in stock, you can use the summer ventilating feature now and be prepared for comfort heating next season. Write for Bulletin EY-516 for full description.

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New York Wilmington



had reversed its position and has decided that if a deep test looks like a good bet to oil men and geologists, maybe it would be a good bet for the Navy. So the Navy itself is taking steps to have the Teapot Dome reserve explored in the deeper horizons, as soon as the experts can agree upon the most likely location for a deep well. A contract will be let by the Navy to a private operator to drill one or more exploratory wells.

Triumphant, the Oil Reporter printed its scoop and within a few hours had the satisfaction of seeing confirmation in press dispatches from Washington, carrying the Navy's admission that it will test Teapot Dome thoroughly before turning it over to any other agency. Back in Denver, the Oil Reporter admitted editorially that it is satisfied, adding, "and hereafter, having learned how far our voice carries, we will be very careful what we say, even when we whisper."

Inside Gunther. At last John Gunther got around to doing a book with the title, "Inside U. S. A." His "Inside Europe," and "Inside Asia," had been heralded in pre-war years as brilliant reporting, etc. It would have been better for his reputation if he had continued to write about subjects unfamiliar to his reading public.

In this long-awaited book, "Inside U. S. A.," the great Gunther reveals the bugs in his type of journalism, or what-

ever such writing may be called. The residents of Colorado find it full of misinformation as to facts and misinterpretation as to trends and developments.

The same probably applies to any other state. Gunther, finding it impossible to get anything more than random impressions of his enormous subject, had to depend upon friends and acquaintances in various sections of the country to supply him with local color and factual information. Unfortunately, some of his informants misled him. Gunther will have to take the rap for their blunders.

Even so, the book will sell like hotcakes and the controversy stirred up by its blunders will publicize the book all the more. Without a doubt, readers in South Africa and Ecuador will find it wonderfully revealing and informative, without quibbling over mere facts or the lack of them. Anyhow, Mr. Gunther seems to be most interested in his own impressions, in a manner that shows he is something of a poet at heart. Now that we know he isn't so hot as a historian, maybe he will leave the fact-finding job to better reporters and content himself with writing poems, epics of course, about somebody else's insides.

Doctor of Dirt. Western Colorado's multi-million-dollar fruit industry is important to the railroads, to the miners, and to the manufacturers of all sorts of containers, bug-killers and whatnot. But

above all, it is important to the farmers who live in Mesa County, of which Grand Junction is the county seat. What is happening in Mesa County is typical of what it taking place in agricultural areas all over the world. People are getting worried about the soil and what is in it — and, particularly, what isn't in it.

There is an ailment called peach chlorosis that has the orchardists of Mesa County worried sick. After looking all over the country for the answer to their problem, they brought in husky young A. F. Hoffman, Jr., known among agriculturalists as one of the half-dozen outstanding county agricultural agents in the United States. Bert Hoffman was ready. The jack-of-all-trades life of a county agent had been interfering for some time with his one great interest — soils.

Several years ago Hoffman had awakened the residents of nearby Delta County, Colorado, to the significance of the dirt they walked on. He showed them that their football teams might win more games if the soils of Delta County weren't so lacking in certain vital "trace elements."

People blinked and acknowledged that everything they eat and drink comes from the soil, directly or indirectly. What had been Bert Hoffman's hobby became his lifework.

Now in Mesa County he has an opportunity to bear down on some of the baffling problems that come right up out of

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the soil. Everybody who knows Bert Hoffman will lay you three to one that peach chlorosis and other soil problems will soon be looking for greener pastures because their days in Mesa County are numbered. The Doctor of Dirt is on their trail.

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Industrial Facts. It took some doing, but now there is a statistical picture of every industrial and commercial property or site in the Denver area. Firms that are looking for a new home can see this data, along with a lot of other interesting material designed to prove that Denver is just about the best spot in the nation for any industry to take root and grow.

B. P. Montagriff, director of the industry department of the Public Service Company of Colorado, is chairman of the Chamber of Commerce committee that had the fact-finding job done by the bureau of business and social research of the University of Denver. Rockefeller Foundation funds helped to pay for the study. Now there is an index card on every property and site, showing location, ownership, assessed value, characteristics of improvements, occupancy, use, transportation facilities, utilities, nature of surroundings and contour of the land.

If the chamber and the university will just do something to correct the drastic shortage of housing and of commercial and industrial space, Denver may be getting some more of the industries that are convinced the West is on its way. A number of representatives of interested firms have arrived hopefully, investigated thoroughly and found that Denver is practically ideal for their purposes. Then, when the deal was virtually closed, came the little matter of vacant space — and blooie went the whole thing. Could you wait another year or two, maybe? Well, maybe . . . and then again, maybe not.

Knous Knows. "The West has been flying by the seat of its pants," according to Colorado's new governor, William Lee Knous. A down-to-earth man endowed with good common sense, Governor Knous (rhymes with house) knows that things that grow any old which way sometimes don't amount to very much.

Speaking recently before the Colorado Municipal League at Boulder, the Governor declared that the West's economic development had been "largely accidental, erratic and unplanned." Calling for a second opening of the West, he said the people must develop realistic plans that will identify clearly their goals. Confusion as to the goals, he indicated, is largely the cause of the haphazard and unsatisfactory growth made so far.

Then he pointed out, "Plans are utterly useless unless they are translated into action. We must proceed intelligently toward the development of our resources, including adequate water for irrigation, the processing of our wool at home and the future development of the entire West."



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 Aerial view of Trentwood rolling mills of Permanente Metals Corp. at Spokane, Wash. One of the largest plants in the world, it covers 53 acres.

# Have We Reached the Peak In Aluminum Production?

Indiscriminate substitution was unfortunate for producers. Emergency uses not economy for customers—sales affected

PACIFIC NORTHWEST — Following the announcement on May 16 that Reynolds Metals Corp. had shut down one of the three potlines that make up its Longview, Wash., aluminum reduction plant, it might be appropriate to consider whether or not the long predicted saturation point has at last been reached in the aluminum market.

Ever since the aluminum boom began shortly after the war's end, the eventual end of the seemingly unlimited demand has been prophesied by many of the men in the aluminum industry. Now something tangible has arisen for study.

It has been pointed out that during the past year and a half aluminum has been substituted for a variety of other materials in many instances, particularly for steel and timber. The tremendous backlog of demand for civilian goods, which had been built up during the war, far exceeded the ability of the steel and timber industries to produce. The result was a process of substituting aluminum more or less indiscriminately wherever the light metal could be used.

Unfortunately for the aluminum producers, the substituting was not always an economy for its emergency customers. While many new uses have been developed where the lighter weight and untarnishing qualities (among others) more than offset the higher cost, continued operation of the war expanded aluminum production could not be said to be based entirely on sound technological development.

Many of the uses to which aluminum has been put recently have been purely and simply emergency substitutions. As materials recently in short supply become availREGIONAL REVIEW
The Pacific Northwest

able, and as the sellers' market becomes a buyers' market, the use of aluminum in the less economical applications seems almost certain to be withdrawn.

As an instance of this, one sales representative in the aluminum industry indicated doubts as to whether the industry could in the long run hold 25 per cent of the building roofing and siding business which has been an extremely popular substitute for almost unavailable galvanized sheet iron.

Whether or not the saturation point has been reached may still be considered debateable, in spite of the announced closing of the Reynolds Longview plant and the

SEATTLE—Monsanto Chemical Co. has awarded the first construction contract for its soy bean flour and wood preservative plant. Four steel frame, brick buildings, which with equipment will cost \$700,000, are included in the first unit to be completed by the end of 1947.

Capacity of the Fisher Flouring Mills plant will be increased 25 per cent to 15,000 sacks of flour per day by construction of a \$193,000 addition which has been approved by the Office of the Housing Expediter.

Movement of production facilities of the Preco Corp., from Bellingham to Kirkland on the east shore of Lake Washington was expected to be complete early in June. Preco purchased a naval warehouse at the Lake Washington shipyard as the new location for its factory-built home operation. continuing delay in reopening the Tacoma plant by Permanente Metals Corp. Although it is generally accepted that aluminum sales now require much more intensive selling effort than at any time since before the war, it does not appear, when all phases of the situation are considered, that the aluminum reduction capacity will be cut by any large percentage of the Northwest total. Longview, one of the earlier of modern aluminum reduction plants, is a low capacity operation with consequent high operation costs. It is one of the two smallest plants in the Northwest, having only three potlines with 20 pots in each line and an annual capacity of 60,000,000 pounds of pig aluminum. With one exception, all of the other reduction plants in the region have two to three times as much capacity.

In an interview with C. K. Warrens, chairman of the industrial committee of the Longview Chamber of Commerce, J. S. Reynolds, president of Reynolds Metals Co., indicated that the decision to close down the plant resulted from a sudden break in the market for pig aluminum and the dumping of surplus, war-produced aluminum on the open market. Reynolds has built up a large inventory of pig at both its Longview plant and the government-owned plant leased by Reynolds at Troutdale, Ore.

Although it was not stated as a definite fact, the possibility of complete closure of the Longview plant has been indicated, and it can probably be taken for granted that this will occur before long. With the plant shut down, Reynolds will have the choice of either renovating the plant for

(Continued on page 72)



Kaiser Community Homes project, with a yearly goal of 10,000 veteran "field and factory" houses—pronounced the Greatest House Building Show on Earth—has made a fleet of 28 Fruehaufs a part of their production line linking factory with building sites.

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These fast, flexible Trailers permit a three-bedroom home "chassis"—a complete house, except for floors, roof and outside wall surfacing—to be delivered on location, up to fifty miles from the factory, in just three hours. As many as twenty of these packaged homes are hauled in a single day, all by Trailers.

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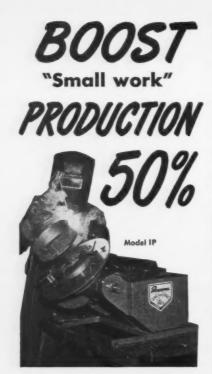
Delivery scene at the Kaiser project. Note—only the Trailer is left standing for unloading. The tractor drops a loaded Trailer, couples to an empty one and returns to the factory for another loaded one—a perfect example of the Trailer "shuttle" method at work to speed deliveries.



The house is completed in much shorter time than by conventional methods. Then, in moves the family. Again the haul has been by Trailer—this time by a Fruehauf Furniture Van.



July, 1947—WESTERN INDUSTRY



Production increases to 50% are possible when you put a Ransome Model IP Motor Operated Positioner on the job for small work. Positioning gives you all the advantages of down-hand welding . . . larger electrodes . . . faster deposition . . smoother, stronger welds. The IP is ideal for hand or automatic welding of work up to 100 lbs. in shops, industrial plants and educational laboratories . . Work manually tilted through 135° arc and locks at any degree of tilt . . . motor rotated through 360° at variable speeds from .21 to 5 rpm. Bench mounted



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Bulletin 210B gives complete information.

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(Continued from page 70)

future operations, or abandoning it completely. The probability seems to be that Reynolds will spend the next year renovating the plant, perhaps with an eye to making improvements which will lower the cost of operation and place the plant on a better competitive basis.

In the meantime the company has announced that the Troutdale plant will be continued in operation. Since this plant has a considerably larger capacity, and probably a lower unit production cost, its operation is undoubtedly less affected by a slight downward trend in the market.

The only other change in the production capacity to be reported during the month of May was a further postponement of the start of operations at the Tacoma plant by Permanente Metals Corp. This delay in re-opening of the former Olin plant is really a postponement in the increase of production capacity, rather than a decrease since the plant has not been in operation since the end of the war.

Statements issuing from the Permanente organization indicate that plans for the utilization of the plant's capacity have changed since it was purchased from War Assets Administration early this year. At that time it was indicated that the output from the Tacoma plant would go to Spokane where it would supplement the output at Mead to maintain the Trentwood rolling mill at capacity production. Both

the Mead reduction plant and Trentwood are operated by Permanente.

Since that plan originated, Permanente has apparently found that Mead will be able to supply Trentwood with sufficient pig to fill present demand, and has decided to enter the pig aluminum market with Tacoma production. The Tacoma plant has the smallest capacity of any of the Northwest plants, and under the Olin administration had a reputation of being an exceedingly high cost operation.

Permanente has put about \$1,000,000 into the plant in making it ready for operation, and officials of the company insist that the plant will definitely be placed in production this summer. In the meantime a newly established pig and ingot sales division has been set up to study the market and determine the date at which the Tacoma plant will be opened.

The Aluminum Company of America is continuing operation of its plant at Vancouver with all five potlines running at an annual production rate of 110,000,000 pounds. No reduction in production or shutdowns are planned there, according to C. S. Thayer, works manager. The only aluminum capacity reduction which has been announced by Alcoa is the abandonment of an antiquated plant in New York that will take place next year.

At Spokane the Mead reduction plant is being operated at about 82 per cent of capacity with five of the six potlines in

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operation. While the original schedule announced for Mead by Permanente Metals Corp. called for full operation by the end of last year, shortages of soda ash for the production of alumina and of hydroelectric power for the reduction process have prevented the full accomplishment of orig-

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No consideration has been given to decreasing the output at Mead, according to Norman Krey, works manager. According to reports, the Bonneville Power Administration has been reluctant to supply

TACOMA — West Tacoma News-print Co., joint venture of 14 Pacific Coast newspapers established to supply the scarcest commodity in the publishing field, began production of 60 tons of newsprint per day on May 14. Wood for the mill is coming from relogged stands of the St. Paul and Tacoma Lum-

Legality of issuance of \$3,500,000 in revenue bonds to finance construction of grain elevators and a flouring mill by the Port of Tacoma is being challenged in a friendly suit to establish the val-idity of a 1941 emergency enabling act under which the bonds would be issued. The mill is intended to replace the Centennial plant which was destroyed by fire several months ago.

power for full operation of the Mead plant or of the Tacoma plant. Temporary closure of the Longview plant will probably not have any effect on the availability of power for other aluminum operations since Reynolds holds a two-year option on its power allocation. There are, furthermore, several requests for large energy consumption from other industries which have had to be denied because of the

power shortage. Production of sheet aluminum at the

Trentwood mill has never come up to the rated capacity of the plant since Permanente began its operations last year. The largest monthly output has been in the neighborhood of 18,000,000 pounds, made late last fall, which represents about three-quarters of the plant's rated capacity. However, additions to the variety of alloys produced and the list of dimensions and shapes is not likely to permit anything like the rated capacity to be obtained. Under these conditions it appears that full production at Mead would probably be sufficient to maintain operations at Trentwood as close to capacity as will be economical.

One move, which might prove to be of benefit of the Northwest aluminum industry in the present market trend, is the formation of the aluminum fabricating institute suggested to the three primary producers several months ago by Hugh B. Mitchell of Seattle. Development of the aluminum market by research into new uses was one of the aims proposed by Mitchell. However, no definite action to form such an organization had been taken

up to the first of June, according to Mitchell.

A prospective user of large quantities of low-cost hydroelectric power (which at present exists only as drawings in engineers' offices with realization subject to the decisions of an economy-minded Congress), will soon begin a 90-day pilot plant operation at the magnesium reduction plant near Spokane to prove the feasibility of extracting magnesium from olivine deposits in northwestern Washington.

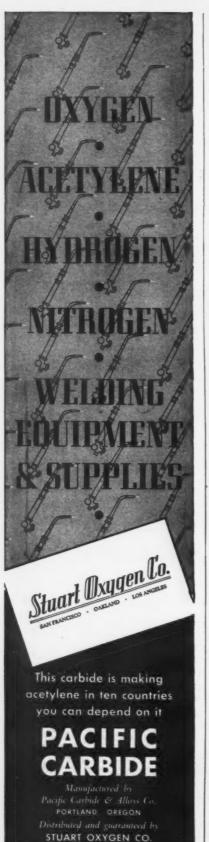
American Chrome & Magnesium Industries offered the War Assets Administration \$8,000,000 for the magnesium reduction plant and \$1,000,000 for the ferrosilicon plant near Wenatchee, Wash. Both bids were rejected by WAA because of doubt that the process, which has never been used commercially, could be operated successfully.

SPOKANE-Continental Baking Co. has received permission to construct a \$200,000 bakery from the Office of the Housing Expediter under a commercial building quota increased to \$400,000 per week for the eastern Washington and northern Idaho area.

Allen V. Smith, Inc., was granted permission to construct a dry pea processing plant at Garfield, Wash.

At the end of May American Chrome announced that it had accepted an offer by WAA to take a 90-day renewable option on the magnesium plant for pilot plant





operation to prove the feasibility of the process. How soon full scale operations could be undertaken should WAA be convinced of the feasibility, is still problematical since Bonneville Power Administration is reported to have told American Chrome that power cannot be delivered to the plant before 1949 at the earliest.

Establishment of the operation would be of considerable importance to the industrial development of the state of Washington, since it would utilize a hitherto almost undeveloped natural resource. More than 2,500 million tons of the olivine ore are estimated to exist in the Cascade Mountains in Skagit and Whatcom counties. Use of the ferro-silicon plant would be tied into the development by producing a ferro-chrome from concentrates recovered as a by-product from the olivine mining.

PORTLAND—U. S. Plywood Corp, is constructing and will have in operation by August a plant for the manufacture of phenol formaldehyde resins. Products of the plant will be used in the company's plywood mills and associated plants.

Ship repair yard facilities on Swan Island, operated during the war by the Willamette Iron & Steel Co., have been offered for sale or lease by the War Assets Administration. Office buildings, warehouses, docks, and piers on the 36-acre site are included. Proposals for taking over the yard, either by section or as a complete unit, will be received until July 10.

Construction of the plant for manufacture of heavy duty paper bags by Bemis Bros. Bag Co. at Vancouver, Wash., may come up for bids during June. Preparation of plans has been delayed beyond the original schedule, but was expected to be completed by mid-June.

Another development requiring electric power and utilizing a local natural resource was announced to be in the pilot plant stage by J. R. Simplot, Idaho producer of dehydrated potato products and phosphate fertilizer.

Simplot has been mining a low concentrate phosphate rock near Idaho Falls, and is now planning establishment of a \$5,000,000 plant to produce a 47 per cent triple super phosphate in place of the 18 per cent product now being made. The process will require coke, silica, and electric power in addition to the phosphatic shales which are now being tested for suitability to electric furnace treatment.

An additional supply of coke, one of the most needed industrial materials in the Northwest, seems to be assured with the announcement that War Assets Administration has sold the Wilkeson coking plant at Tacoma and coal mine facilities at Wilkeson to Richard E. Randall, president of Consolidated Coal Mines, Inc. Randall announced that operation of the



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mine and coke plant would be pushed in an effort to meet the unprecedented demand for coke. The facilities, which have been closed for the past 18 months, sold for \$600,000.

Another War Assets Administration agreement will result in an expansion of production facilities for carbon and alloy electric steel castings in Portland. Pacific Steel Foundry has been granted a five-year lease on the plant which it operated during the war for the production of anchor chains. Reconversion of the plant for full volume production of electric steel castings has been withheld pending settlement of negotiations, but will now proceed, according to A. D. Stout, general manager.

On the chemical industry front, the War Department has announced that it will retain the charcoal production plant in Seattle as one of the 13 chemical plants to be maintained in standby status for use in event of emergency. The plant and surrounding property is now being occupied by Reichhold Chemicals, Inc., for the production of synthetic resin adhesives used by the plywood industry. The charcoal production facilities have been sealed off and are not in use under the lease agreement between Reichhold and the Army.

Food processing opened somewhat early in the Northwest when unseasonably

hot and dry weather ripened the pea crop in eastern Oregon and Washington. Some reduction in yield is expected, but rains at the close of the month were expected to cut the predicted losses by as much as half for many crops.

# Lighting Problems Can Be Solved

Many of the problems which still exist in the lighting industry, such as temperatures on recessed fixtures, glass enclosures or diffusers, high voltages on new light sources, and adequate support of fixtures, could be solved or greatly simplified, according to Leonard A. Hobbs, vice-president and sales manager of the Smoot-Holman Co.

He told northern California section of the International Association of Electrical Inspectors recently that conflicting local regulations or lack of uniform standards tend to increase costs, retard progress and prevent the use of modern equipment in many communities. The excess cost of manufacture caused by the necessity of special construction for a particular locality; and the added costs of installation resulting from outmoded regulations, are added burdens, and as such are dangerous to the industry.

# **Wood Pulp Developments**

Two wood pulp developments occurred in the far north. Celanese Corp. of America announced plans for a \$15,000,000 purified cellulose plant to be constructed eight miles southeast of Prince Rupert, B. C., and the Department of the Interior reported that several groups are actively interested in the establishment of newsprint plants capable of producing 600 tons of newsprint per day and costing \$20,000,000 each. The joker in this proposal seems to be that there is not sufficient electric power generated in Alaska to operate even one of these plants.

Harbor Plywood Corp., Hoquiam, Wash., has purchased 730,000,000 board feet of virgin timber in Skamania County northeast of Vancouver, Wash., and will construct a plywood plant, sawmill, door plant, and shingle mill for processing the newly acquired timber, with the probability that a cooperative sustained yield program will be worked out with the Forest Service to permit harvesting of major federally owned stands in the same vicinity.

Additional developments in the plywood field include the announcement of two more new synthetic resin plants. American-Marietta Co. is planning to expand the facilities of Adhesive Products Co. in Seattle with the installation of 1,000,000 lb. monthly capacity, and construction of a new plant of equal capacity at Westminster, B. C. Northwest Resin Products, Inc., has asked Civilian Production Administration to review its application for construction of a \$19,000 synthetic resin plant at Portland.



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# Million Dollar Gypsum Plants Stimulate Utah Industry

Gypsum deposits in this area said to be world's best — 89 per cent pure and close to surface.

ALT LAKE CITY—Another section of Utah, heretofore dependent upon agriculture and local trade, is getting an industrial shot in the arm. Two modern gypsum plants are being built at Sigurd in the Sevier valley by the United States Gypsum Company and the Western Gypsum Company.

Each plant will cost well in excess of \$1,000,000 and both will manufacture gypsum plaster products and wall board for distribution to intermountain and Pa-

cific Coast states.

Construction of Western Gypsum's plant is well under way. The company was recently organized to construct and operate the Sigurd plant and is officered by U. S. Gypsum alumni.

U. S. Gypsum, which purchased properties and announced plans for a plant before the war, hasn't started actual construction but has signed a contract for

REGIONAL REVIEW The Wasatch

electrical power with the Telluride Power

Gypsum plaster has been manufactured on a very small scale at Sigurd for many years but it has not heretofore attained the status of an important industry.

Lack of electric power in that section of the state threatened for a time to stymie the projects. The only power company in the area was unable to take care of the load. But a program of line extensions to connect with Utah Power & Light Company solved the problem. U. S. will connect and Western Gypsum is building its own power plant.

The gypsum deposits are close to the surface, about 98 per cent pure, and are among the best in the world for white

products.

First of the satellite industries which Utahns hoped would develop in Utah as a result of the basic steel production at Geneva is being developed not by a new or outside company but by one of the pioneering steel fabricating firms of the state. The Rosenblatt family, which built a junk yard into three manufacturing companies specializing in mining equipment, will shortly begin construction of a new plant to produce finished building steel products. They have purchased the government's wartime vanadium plant for \$81,400 as a site. The buildings there are unsuitable for conversion so they will be converted to salvage to make room for a new plant.

Eastern Congressional representatives have screamed sectional subsidization in connection with reclamation for so long

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and so loudly that some Westerners are abashedly beginning to believe it. But an examination of the record suggests that the eastern complaints are based more on semantics than on figures. If dams and waterways to equate stream flows where there is too much water are considered along with dams and waterways to equate the flows where there is too little water, the east and south have been more heavily subsidized for water conservation and control projects than has the West.

Federal contributions since 1824 for this activity (called reclamation in the arid West and flood control elsewhere) add up to \$5,580,428,898, according to information compiled by the Department of the Interior. Of this amount the western half of the country (geographically speaking) has received \$1,770,250,667 as against \$3,810,178,231 for the remainder.

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If repayable contributions are deducted from both totals the 17 Western states emerge with non-repayable contributions of \$851,169,029 and the remainder of the country with \$3,311,004,542. On a land area basis the subsidization ratio is almost four to one in favor of the east. On a per capita basis it figures out \$31.50 for the West and \$31.65 for the East.

Two states—Utah and Wyoming—have received no non-repayable contributions.

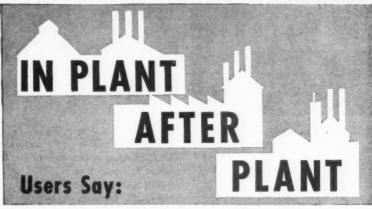
A recent study by the Utah Department of Employment Security provides a good picture of the changing industrial pattern in the Salt Lake City area during the volatile period of 1940 to late 1946. Employment covered by unemployment insurance rose from 39,344 in April of 1940 to a peak of 68,843 in September of 1943 and then receded to 65,970 in September of 1946.

Four categories have expanded since the 1943 peak and three have shrunk. The continuing expansion has been greatest in wholesale and retail trade - 12,755 in 1940; 19,541 in 1943 and 25,773 in 1946. Manufacturing climbed from 8,883 in 1940 to 23,335 in 1943 and dropped back to 11,717 in 1946. Mining rose from 4,321 in 1940 to 6,327 in 1943 and then contracted to 4,819 in 1946, only slightly above the 1940 figure.

Assessed valuation of utilities and mines in Utah for 1947 is 19,405,000 below the 1946 figure. Most of the drop is accounted for by the mines and the reason for the decline there is the six-month strike last year in the major properties. Inasmuch as mine valuation is based on production of the prior year, the lost 1946 output shows up in the 1947 valuation figures.

Door to Japan Opens

Regional offices of the Department of Commerce are now taking applications of business men who plan to buy Japanese exports, sell raw materials to Japan, to provide commercial services facilitating trade between the two countries and to inspect commercial investment possibilities.



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July, 1947—WESTERN INDUSTRY

# LABOR

INDUSTRIAL WEST

# **Employment Stabilization Reduces Insurance Rates**

REDUCED unemployment insurance rates ranging from 2.5 per cent to zero per cent may be realized by eligible employers now, due to the recently passed amendment to the California Unemployment Insurance Act.

This amendment provides that after December 31, 1947, whenever the balance in the fund on January 1st of any calendar year equals 7½ per cent of the taxable wages during the 12-month period ending upon the immediately preceding computation date (June 30), eligible employers are to make contributions at reduced rates ranging from 2.5 per cent to zero per cent.

To understand the new act, and to profit thereby it is necessary that an employer thoroughly familiarize himself with the eligibility standards, and the basis of calculation.

# Elegibility for a Reduced Rate

(a) An employer's reserve account must have been subject to benefit charges during

the period of 12 complete consecutive calendar quarters ending on the computation date for a rating period and the employer must have a reserve ratio of 7½ per cent or more

(b) Contribution and earnings reports for all quarters up to computation date, must be filed and paid timely.

### **Basis of Calculation**

The California Employment Stabilization Commission keeps separate records of the amounts paid into the fund by the employer and those chargeable to him as benefits. An employer's reserve ratio is computed by dividing the reserve balance as of a computation date by the average taxable payroll for the three calendar years preceding the computation date, which date is fixed as June 30 of each year. The contribution rate is then determined from the following table:

Reserve Ratio	ontribution Rate
Less than 71/2%	2.7%
71/2% but less than 9%	2.5%
9% but less than 10%	2.0%
10% but less than 11%	1.5%
11% or more	1.0%

For example, Employer "Z's" Reserve Account includes the following entries:

Year	Ins. Charges or Benefits Paid	Taxable Payroll	Tax Rate	Contribution Credits
1941	*******	None		
1942	0000000	\$10,000	.027	\$270
1943	\$100	10,000	.027	270
1944	80	10,000	.027	270
1945	75	10,000	.027	270
1946*	50	5,000	.027	135
Total	\$305			\$1215

\*Jan. 1 to June 30 (regular computation date for preceding three-year period.)

Reserve Balance is \$1,215 (contribution) less \$305 (benefits paid out) which equals \$910.

# Where YOU Can Cut Costs!

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Reserve Ratio is \$910 divided by average annual payroll for three years of \$10,000 which equals 9.1 per cent.

Therefore the contribution rate for year 1947 will be 2 per cent.

The above example and table are in use at the present time. At a later date a revised table and example pertaining to the new rates will be available.

Consequently a stabilization of employment by each employer will tend to decrease the contribution rate.

# Coal Miners Don't Do So Badly, After All

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Bituminous coal miners are, in terms of weekly earnings, at the top of the industrial ladder, according to a survey of wages and earnings by the National Coal Association, in which the following examples from the West were included:

Twelve men in the higher wage brackets in a Montana mine earned from \$406.16 to \$458.82 for a work month of 27 days. The range in the lower wage bracket at this same mine, same time, was from \$351.43 to \$401.85.

Top earners of steady men in the higher bracket in a mine in the Rock Springs district of Wyoming received from \$402.58 to \$419.41 for less than 240 hours of work. Men in the lower brackets at the same mine, same month, got tops of from \$297.43 to \$337.30 for hours ranging from 207 to 234.

A Washington state mine reported leading earners in the upper brackets as ranging from \$337.25 to \$406.27 for 216 to 236 hours. Lower bracket earners, same mine, same month, and same hours' range, earned from \$288.55 to \$313.44.

To illustrate the latitude allowed miners as to their choice about working, two loader operators of a Utah mine in January, 1947. One man worked 225 hours that month and received \$403.33; another loader operator worked 27 hours and received \$45.73 for the same month.

# Western States Change **Compensation Laws**

Important changes in unemployment compensation laws were made in five Western states during the past year, and most of the changes increase benefits to

In Idaho, the minimum benefits were increased from \$5 to \$10 a week, to be paid for a duration of 20 weeks, the work test was extended to permit payment of benefits for unemployment caused by temporary disability, and the waiting period was reduced from two weeks to one.

Montana raised its minimum from \$5 to \$7. Utah lengthened its payment period from 23 to 25 weeks, and New Mexico stretched it to 20 weeks.

Arizona shortened its payment period from 14 to 12 weeks after an employment survey in the state, and with regard to state employees, ruled that state officials shall determine the eligibility of state employees for coverage.

# **How Employees Like** Free Enterprise Paper

A reader survey of the Southern California Forum, a weekly newspaper published by the Merchants & Manufacturers Assn., mailed directly to the homes of employees of about 200 companies and intended to give fundamental facts with re-



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# Split Day Decision Costs Computed

Additional wages apparently due coal miners under the Utah wage scale as a result of the U. S. Supreme Court decision in the Alaska Juneau Gold Mining Co. split-day case have been computed by B. P. Manley, executive secretary of the Utah Coal Operators Association, as follows:

In the case of men working five days a week, additional wages of 89c to \$4.17 a week due; for six days a week additional

wages of \$2.53 to \$6.23.

The court's decision left in effect the ruling of the Circuit Court of Appeals that the split-day plan involved violated the Fair Labor Standards Act. It was included in a contract with the union providing for an eight-hour day, but with the first seven designated as straight time and the hourly rate reduced, and the last hour designated as overtime at time-anda-half, with the result that the employees' daily wage for the eight-hour shift remained substantially the same as it had been prior to the effective date of FLSA.

# Double Trouble, Double Overtime

More than 200 cases have been filed with the Wage and Hour Division by employees of waterfront employers on both the Pacific and Atlantic Coasts asking for "double overtime." The Industrial Relations Council of Salt Lake City reports that two representative types of cases now being brought in the federal courts under the wage and hour law, involve the following principles of overtime provisions (time and one-half or double time):

1. Overtime before 8 a.m. and after 5 p.m.

2. Overtime during meal hours.

3. Overtime on Saturday or Sunday

4. Overtime after six or eight hours a day.
In these cases it is claimed that whenever an employee regularly works in contract overtime hours, the contract overtime

rate must be treated as a straight time rate at law. In the double overtime cases, if the law supports the worker, the employer's liability is inescapable and can be computed on an adding machine without

trouble.

# **Bargaining Unit Rule**

The National Labor Relations Board, in a recent ruling, approved the subcontractors operating the green chain and the dry chain at the Gilchrist Timber Company (Central Oregon) as being included in the single bargaining unit. This means that the company must deal with the Lumber and Sawmill Workers' Union in the event the union secures a majority of the "bargaining cards" of the men employed by the subcontractors, despite the fact that the company claims that it does not "employ" subcontractors. This NLRB ruling sets a precedent for the industry.

# Commission to "Bear Down" On Lumber Industry

The California Industrial Welfare Commission is planning to enlarge its staff preparatory to an all-out campaign to enforce the new manufacturing order regulating the employment of women and minors in the state's lumbering industry. They will pay especial heed to sanitary working conditions. These plans are stymied for the time being, pending a Los Angeles court action in regard to the effective dates of the orders.

# New California Minimum Wage

The new minimum payrate of 65c for women and minors was put into effect June 1 by the California Industrial Welfare Commission. Despite a series of actions during the past months, in which various employers have questioned the validity of the proposed orders, the California Supreme Court on June 16, 1947, denied employers' petitions requesting a stay of the new orders.

These new orders, which also make mandatory the providing of a 10-minute rest period for every four work hours, cover the following industries:

Manufacturing, personal service, canning and preserving, professional, technical, clerical and similar, public house-keeping, laundry, dry cleaning and dyeing, mercantile, farm products after harvest, transportation, amusement and recreation. No change has been made in the maximum hours requirement of eight hours per day or 48 hours per week.

One of the many objections to the new order, was that raised by the hotel owners who objected to the split-shift clause. This clause provides that any employee working a split-shift day would receive an extra 65c, or pay for an hour's work, to offset the inconvenience of time and extra carfare paid out to work split-shift hours. The hotel owners objected to paying this extra hour to their resident workers.

Many employers objected to the orders, protesting that proper studies of various industries and situations had not been made. Employers can still file injunctions against the order in the Superior Court.

# THE WEST ON ITS WAY

# ARIZONA

ARIZONA COPPER PROJECT PLANNED — Twenty-eight mining claims in the White Mesa mining area, 110 miles north of Flagstaff, Ariz., have been taken over by the Lewin-Mathes Company of St. Louis. Extensive drilling operations will begin shortly. The first processing plant to cost \$500,000, will be constructed soon afterward. Exclusive rights to a new type mining process, an air-suction method which eliminates costly use of smelters, have been acquired. The White Mesa section is composed mainly of low grade copper ore running about one per cent.

URANIUM FOUND IN ARIZONA—The Arizona Department of Mineral Resources has disclosed the discovery of a large deposit of uranium-bearing ore in an Arizona copper claim. It was found in a deposit of carnotite and tests are under way to determine if it is in sufficient quantity to be worked commercially. The ore, chief ingredient of the atomic bomb, was found in Hack's Canyon, 155 miles southwest of Fredonia, Ariz., and near the north rim of the Grand Canyon.

RICH ORE DISCOVERY CLAIMED—A body of high grade silver lead ore in a vein 7½ feet wide at the point of contact has been discovered at the Ruth Mine near Prescott, by the Calan Mining Company. Manager Walter L. Smith predicts that 25 years of mining are assured by the strike.

COPPER PROPERTY LEASED—The Emerald Isle copper properties, 15 miles north of Kingman, have been leased to eastern interests. A crew has started work on rehabilitating the mine so that it may be put on a production basis and a 500-ton-a-day leaching plant on the property likewise is being prepared for operation. The property had been idle for several months. The mine will be operated by Robert Payne, its former production superintendent.

CO-OP GETS LOAN—Mohave Electric Co-operative, Kingman, has been granted a \$310,000 REA loan.

NEWSPAPER PLANT BEGUN—Ground has been broken for the new plant of Phoenix Newspapers, Inc., at Van Buren and Second Sts., Phoenix, by Del Webb Construction Co. The new building will contain 70,000 square feet. Estimated cost is more than \$1,000,000.

TENNESSEE MINE SHIPS CONCENTRATES — Lead concentrates averaging above \$8,000 per 50-ton car are going forward regularly from the Tennessee Mine, Chloride, to the American Smelting & Refining Co. smelter at El Paso, Texas. Tennessee Schuylkill Corp. reports current production at three times the average tonnage in 1946, and the company plans to mine and mill 100 tons of ore daily within the next two months. . . .

ARIZONA STATE BUYS AIR FIELD—Thunderbird Army Air Field No. 2, Phoenix, has been purchased from WAA by Arizona State College, enabling the school to increase its enrollment by 300 to 500 students. WAA did not announce the price, but called it a "nominal consideration." Fair market value was estimated at \$238,115. Property will supplement college classrooms, shop, dormitory, cafeteria and infirmary. College will maintain the field's landing area. . . .

STAUFFER TO OPEN PHOENIX FACTORY — Stauffer Chemical Co. soon will open a new plant in Phoenix to produce fertilizers and insecticides as well as various acids used in the leaching process of copper milling and the processing of gold ore.

NEW CEMENT PLANT PLANNED FOR TUCSON—Arizona Portland Cement Co. will build a new plant at Tucson with capacity of 1,800 barrels of cement a day.

# CALIFORNIA

STANDARD OIL OPENS S. F. WAREHOUSE—Standard of California's new \$750,000 warehouse and distribution terminal at Seventh and Irwin Streets in San Francisco, is now in operation. Mechanized handling devices have been engineered into the building, which covers 100,000 sq. ft. of floor space. It will be the distribution center for tires, batteries and automotive accessories for Northern California and a portion of Central California. Approximately 140 employees staff the installation.



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# THE WEST ON ITS WAY

FIBREBOARD PLANS PULP PLANT—Fibreboard Products, Inc., will start construction shortly on another unit of its \$24,000,000 three-year development program announced last year—a sulphate pulp plant at East Antioch in Contra Costa County. Approval of the new unit, to cost \$2,836,000, was announced from the office of the National Housing Expediter. Pulp output of the new plant will go into manufacture of shipping containers and cartons for packaging foods.

AMERICAN RADIATOR LETS CONTRACT — American Radiator and Standard Sanitary Corporation has awarded contract for construction of its new \$2,000,000 Richmond brass plant to the Empire Construction Company, San Francisco. Construction will start immediately and will be rushed to completion. The new plant will adjoin the corporation's present enamel ware plant at 1069 Essex St., Richmond.

STEAMSHIP CO. GETS FRANCHISE—Alexander Steamship Co.'s application for a franchise to operate ships between San Francisco and Long Beach has been granted by the state public utilities commission. Plans have been made to operate two 563-foot ships, not yet built, with staterooms for 348 passengers and space for 186 trucks and trailers and 64 passenger autos. Cost of each ship is estimated at \$8,500,000.

MATSON TO REFRIGERATE SHIPS—Matson Navigation Co. has contracted with Carrier Corp. for refrigeration of the holds of eight Matson C-3 type freighters at a cost of \$3,500,000. Carrier Co. described the order as "one of the largest peacetime contracts ever placed for marine refrigeration." Each ship will have 20 refrigerated cargo compartments with total volume of 78,000 cubic feet. Cargo temperatures can be regulated at any desired point between 10 degrees below zero and 50 degrees above. A marine type cold diffuser will circulate air at the rate of about one change per minute.

BETHLEHEM'S LAB NEARS COMPLETION — Bethlehem Pacific Coast Steel Corp.'s new spectographic laboratory will be placed in operation in the late summer of 1947. All steel processed in the South San Francisco plant will be examined in the laboratory. Use of the spectograph will enable the company to analyze 10 elements of steel in 20 minutes, compared with eight to 24 hours formerly required.

WHAT'S NEW IN LOS ANGELES COUNTY-Wm. R. Warner & Co., New York, has acquired property at 3440 S. Hope St., Los Angeles, and will begin local manufacturing operations about the end of June. Company will make Courtley men's toiletries, Richard Hudnut products, Sloan's liniment, and other pharmaceuticals and cosmetics. C. T. Cubellis will manage the new plant. La Brea Heating & Air Conditioning Co., 734 E. Hyde Park Blvd., Inglewood, is making evaporative cooling equipment, attic furnaces, etc. Carl Kriwanek is president. Cal-Sun, Inc., 719 E. Pico Blvd., Los Angeles, has begun production of men's and boys' sport and T shirts, and sweaters. Fifty machines are in use and six knitting machines are being installed. Myron E. Kron-heim is the principal. Montrose Chemical Corp., Newark, N. J., has established a plant at 20201 S. Normandie Ave., Los Angeles, for man-ufacture of DDT. Local firm will be known as Montrose Chemical Corp. of California. Saylor Electric Products Corp., Detroit, will shortly be manufacturing at 1721 Standard Ave., Glendale, non-metallic flexible conduit for the electrical construction industry. 10,000 sq. ft. will be utilized. Rothschild Bros., 622 S. Clarence St., Los Angeles, is making solid mahogany furniture. Airflo Aluminum Awning Co., 4848 W. Jefferson Blvd., Los Angeles, has started manufacture of aluminum awnings. Met-Tec Mfg. Co., 2226 S. Barry St., West Los Angeles, is making shower doors and tub enclosures in a new building. Haldale Die Cast Products Co., 1660 - 20th St., Santa Monica, has begun manufacture of various die cast products, such as builders' hardware, automobile accessories, hand tools and toys. Murhan Electric Cord Co., 1514 Hillside Drive, Glendale, is making electric cords. Edca Toy Co., 4222 Van Buren St., Culver City, has started production of a combination beach ball and paddles. Atlas Auto Parts Products, Inc., 808 E. Slauson Ave., Los Angeles, is doing die casting, electro plating and finishing.

LOS ANGELES COUNTY EXPANSIONS—General Motors Truck & Coach Div., 1850 E. Washington Blvd., Los Angeles, is constructing a 100,000 sq. ft. warehouse at the corner of Leonis Blvd. and Downey Rd. Knudsen Creamery Co., 1974 Santee St., Los Angeles, will erect a two-story addition at 1968 S. Los Angeles St., Los Angeles, to cost about \$250,000. Milk receiving and processing will be carried on in the new space. Reid Murdock & Co. has recently completed its new plant at 4433 E. 49th St., Los Angeles, where 100,000 sq. ft. of floor space is utilized for coffee roasting and packing, and warehousing of canned vegetables and fruits. Di Carlos National Bakery Co., 469 W. 9th St., San Pedro, will erect an addition of 10,000 sq. ft. and install new machinery for production of bread and rolls. Steamaster Automatic Boiler Co., 5819 Compton Ave., Los Angeles, is completing its new building which will afford approximately 100,000 sq. ft.

of floor space for production of automatic boilers. Anchor Hocking Glass Corp., Closure Division, 4494 E. 49th St., Los Angeles, has purchased the building at 8653 Atlantic Blvd., South Gate, and will move to that location. The one-story structure containing about 62,000 sq. ft., will be used for manufacture of botfle caps. Glass Containers, Inc., 3601 Santa Fe Ave., Los Angeles, manufacturers of glass bottles and jars, has constructed an addition to its plant, to be used as a decorating unit. Considerable new equipment has also been added which brings cost to around \$100,000. Denman Metal Finishing Co., 2700 E. 12th St., Los Angeles, has acquired 47,000 sq. ft. at this address, which space is utilized for manufacture of plastic coatings and for doing baked enameling. Enameling ovens have been installed ranging in size from 5 ft. high, 5 ft. wide, and 7 ft. long, to 10 ft. wide and 40 ft. long. Cinch Products, 4540 Colorado Blvd., has added 45,000 sq. ft. for expanded production of prepared flour such as cake, corn bread, waffle mixes. Oriental Rug Cushion Co., 4903 Everett Ave., will construct a two-story building at 4824 Everett Ave., to contain 39,000 sq. ft. for increased manufacture of rug cushions, carpet linings, stair pads.

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MORE LOS ANGELES EXPANSIONS—Kroehler Mfg. Co., 311 W. Redondo Blvd., Inglewood, is constructing a two-story and basement addition to contain over 23,000 sq. ft. and a lumber shed of 7,700 sq. ft. Company makes upholstered living room furniture. Latex Co., 921 Venice Blvd., Los Angeles, has acquired 26,000 sq. ft. at 694 Moulton Ave., for fabrication of "Airfoam" mattresses and cushions. Allied Veneer & Lumber Co., 1232 Factory Pl., Los Angeles, will shortly move to its new plant at 5100 S. Boyle Ave., where 24,000 sq. ft. of manufacturing space will be utilized for fabrication of veneers. A 3,000-sq. ft. loading dock will also be installed. Standard Machine Works, 78 N. De Lacey Ave., Pasadena, manufacturers of aircraft parts, will add about 20,000 sq. ft. to floor space, and are re-tooling for manufacture of small Diesel engines of 1½ to 5 hp., on which production is expected in about six months. Diamond-T Preserving Co., 1833 No. Eastern Ave., Los Angeles, will construct a two-story addition to contain about 16,000 sq. ft. Company makes jams, jellies, preserves, fruit nectars, and table syrup. Ceco Steel Products Corp., 1450 Mirasol St., Los Angeles, has added 11,500 sq. ft. to manufacturing facilities for zeinforcing steel, and residential steel casements. Ellis Paint Co., 805 W. Anaheim Blvd., Long Beach, plans to construct a building at 700 West Anaheim Blvd., Long Beach, to contain 8,500 sq. ft. Company makes paint, varnish, and enamel. Coast Centerless Grinding Co., 761 E. Slauson Ave., Los Angeles, plans to construct a building at 955 E. Slauson Ave., to contain about 10,000 sq. ft. Keystone Engr. Co., 1444 S. San Pedro St., Los Angeles, will build a 10,000-sq. ft. addition to its machine shop. John Cavanaugh Co., 628 S. Clarence St., Los Angeles, will move to this address for continued manufacture of metal market baskets, small hand trucks, rubber casters, etc. 7,500 sq. ft. will be available. Paul-O-Cast Co., formerly M & M Foundry, 4835 Staunton Ave., has moved to its new plant of 8,500 sq. ft. at Lo

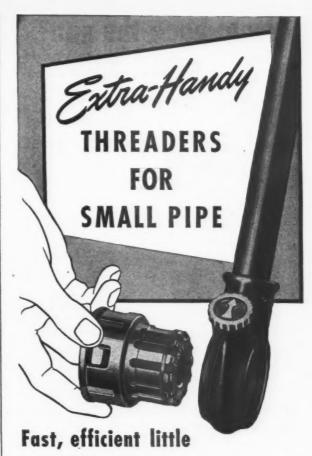
NEW FIRMS IN SAN DIEGO—Presidio Products, 936 Sherman St., J. N. Lavery and L. C. McLean, owners, manufacturing doors, screens, and doing general cabinet work. Standard Sliding Door Unit, 3477 University Ave., Raymond A. Whitwer and Ira Shafer, partners, manufactures sliding door units, wardrobes, and linen closet tracks. Steelcraft Manufacturing Co., Eugene D. Green and V. A. Petricola, owners; 2680 Kettner Blvd.; engaged in sheet metal processing and tube forming, and is producing an "Auto Carryon," an arrangement which makes it possible to carry boats, lumber, etc., by auto. Sun Harbor Bottling Co., 225 West 27th St., National City; B. E. Gunderson, owner; bottling carbonated beverages.

SUN CHEMICAL BUYS ELECTRO-TECHNICAL—Electro-Technical Products, Inc., manufacturers of bottle cap liners, rubber separator, cloth and electrical insulation, with plants in Los Angeles, Calif., and Nulley, N. J., has been acquired by Sun Chemical Corporation.

BORDEN BUYS CHEESE CO. — Borden Company has announced acquisition of the Pacific Cheese Company of Oakland, as the nucleus of a new Northern California cheese division of Borden, with R. B. Keater, former Western division manager for Kraft Foods Company as president.

LITHOGRAPHING PLANT PLANNED — A. Carlisle & Co., San Francisco, is planning a \$1,000,000 printing, lithographing and stationery plant to be located at Harrison St. between Second and Third Sts., San Francisco. Present plans call for a three-story reinforced concrete building providing 120,000 sq. ft. of floor space, to be completed by the spring of 1948. Plant will employ about 350 persons. . . .

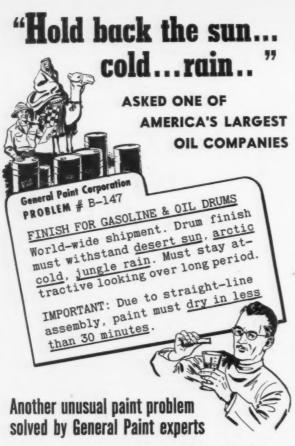
NEW \$1,000,000 WINERY PLANNED—A \$1,000,000 winery under construction at Bakersfield is expected to be completed and ready for operation in time to handle the 1947 grape crop. The plant, owned and operated by the Ciumarra Vinyards Corp., will be equipped to crush between 40,000 and 50,000 tons of grapes per season. . . .



PIDONOS. OOR and 111R for threading 1/8" to 11/4" pipe

● No slow complicated get-ready with these extra-handy small release threaders. You snap the die heads in easily from either side—can't fall out. You need no special dies for close-to-wall threads. Clean accurate threads always from heat-treated tool-steel dies. No. 00R, 1/8" to 1"—No. 111R, 1/8" to 11/4". Ask for these efficient durable threaders at your Supply House.





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And . . . this General Paint drum finish dries thoroughly in 20 to 30 minutes!

This same kind of General Paint "know-how" can help solve your paint problem—whether it's product finishing or factory maintenance painting. Call in a General Paint expert.



# THE WEST ON ITS WAY

NEW MACHINES FOR TEXTILE PRINTING—United Piece Dye Works, New Jersey firm with a plant at Los Angeles, has ordered four new roller printing machines for rayon, synthetic and blended cloth, the first such machines on the Pacific Coast. Machines are expected to get into operation early in 1948. Charles Tagliabue is West Coast mgr.

PG&E TO BUILD POWER HOUSE—Approval to build a \$660,000 power house development in Amador Co., has been given the Pacific Gas & Electric Co. by the Office of the Housing Expediter.

LOCKHEED GETS WAA PROPERTY—Lockheed Aircraft Corp. has exercised an option to acquire from the government facilities and property valued at \$8,724,124, including several buildings and equipment adjacent to its factory A-1 air terminal. In return, it transferred to WAA its B-1 factory, valued at \$8,442,658, and paid \$281,446. Then it leased the B-1 plant back from the government for a five-year period in order to continue production of the P-80, jet-propelled Shooting Star for the Army. . . .

G.E. PLANS \$2,000,000 PLANT AT SAN JOSE—The General Electric Co. will start immediate plans for construction of a \$1,000,000 factory on its 57-acre site just outside San Jose. Another \$1,000,000 will be spent on equipment, and approximately 450 to 500 persons will be employed. The new plant will make polyphase and single phase motors, and 300 new employees will be added to those already working at the San Jose plant now being leased by G.E. The new plant will permit the expansion of transformer manufacturing at Oakland. . . .

CONCORD TO HAVE NEW INDUSTRY—Construction has started on a factory for production of the Smith Univator Rotary soil tiller in Concord. The present factory is in Berkeley. Production, expected to hit 1,000 machines this year, will be by the belt line method of assembly.

NEW BASE FOR AIRLINE—Santa Fe Skyway, Inc., wholly owned contract air freight affiliate of the Atchison, Topeka and Santa Fe Railway Co., is moving to a new operations base located in the former Air Transport Command hangar at the Los Angeles Municipal Airport. George W. Lupton, Jr., is vice-president and general manager.

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\*See WESTERN INDUSTRY for May, 1947

DOUGLAS PURCHASES LONG BEACH PLANT—Douglas Aircraft Co. has purchased from WAA the company's 141-acre Long Beach property, plant and equipment, adjoining the Long Beach Municipal Airport. Total price is \$7,810,413, of which \$5,452,433 is for real estate and \$2,357,980 for equipment. The Long Beach plant is at present producing parts for DC-3's, C-47's, DC-4's and A-26's. Property consists of 1,300,000 sq. ft. of hangar and shop space, 75,000 sq. ft. of office buildings, and 45-acre parking lot. . . .

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GLASS COMPANY BUILDING PLANT — The first batch mixing tower of its type to be erected on the West Coast is now under construction at the Latchford-Marble Glass Co., Los Angeles. Housing modern facilities for the collection, weighing, mixing and storage of glass materials and batch, and crushing of cullet, the tower will rise 95 feet from grade, with a diameter of 34 feet. To operate the plant, one man will be required, working eight hours a day. Machinery will be entirely installed about August 15...

RADIO COMPANY INCORPORATES — The A. L. Nelson & Co., West Coast manufacturers of radio transformers, has been purchased by the Nelson Electric Corp., a newly-formed California corporation located at 1620 Euclid St., Santa Monica. A. L. Nelson becomes pres. of the new corporation. Company will continue to make radio and small industrial types of transformers, and will expand to make heavier industrial types such as distribution transformers, both dry and oil-filled, for public utilities and industrial plants. . . .

ELECTRIC TOOL OPENS NEW PLANT—The Electric Tool and Supply Co., Los Angeles, have opened their new plant at 3000 Santa Fe



Ave., where 18,750 sq. ft. are available for display of the company's line of products, a parts department and a service department. . . .

STOVE ASSEMBLY PLANT AT CAMPBELL—Santa Clara Stove © Co., division of the Oakland Stove Co., Belleville, Ill., has purchased a 2½-acre site at Kennedy and Railroad Ave., Campbell. A building of 15,000 sq. ft. will be constructed, and operations are scheduled to start at the end of this year. Plant will employ 25 to 30 people. . . .

FRUEHAUF BUILDS OAKLAND PLANT—Fruehauf Trailer Co. has been granted approval from the OHE to build a 100,000-sq. ft. branch plant in Oakland at San Leandro Highway and 92nd St. The Oakland branch will cost approximately \$300,000. . . .

BLIND FACTORY CONSTRUCTED—A. M. Brazell Co., San Carlos, are constructing a \$50,000 venetian blind factory to be completed shortly. Company will employ 30 workers....

CALIFORNIA STEEL EXPANDING—California Steel Products Co., Richmond, has purchased four acres of adjoining property as a first step in a \$200,000 expansion program. . . .

NEW HOME FOR OIL SUPPLY CO.—Republic Supply Co. of California, independent oil well supply company, is considering building new and larger quarters for the home office in Los Angeles now located at 2122 E. 7th St. The company has already completed new buildings at its Fresno and Wilmington offices.

TAG AND LABEL GETS NEW PRESS—With CPA approval on building plans for a new factory at San Pablo, Eastman Tag and Label Co. is now planning installation of new machinery worth more than \$500,000, including a large multi-color rotogravure press for printing on foil, a process new to the Pacific Coast. . . .

PACIFIC PALLET CO. OPENS NEW PLANT—In addition to fabrication of pallets, the Pacific Pallet Co. now manufactures skids and iron-bound boxes in new Montebello plant at 1720 S. Greenwood St., on the outskirts of Los Angeles industrial district.

OHE APPROVALS IN NORTHERN CALIFORNIA—Bonn Packing Co., Orange Cove, \$75,000 for fruit precooling plant. . . . Kaufmann Meat Co., San Jose, \$95,000 for cold storage plant and feed mix plant. . . Aluminum Cooking Utensil Co., Oakland, \$283,354 for warehouse. . . . Moran Plumbing Supply Co., Oakland, \$82,000 for new



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independently powered, with 2 to 3 times the H.P. on overloads, Mall Heavy Duty Industrial Flexible Shaft Grinders are free of interference from other tools, operate at a constant high speed with maximum power delivered to the working tool which operates with true concentric motion and a minimum of gyroscopic force on all applications. With this electric motor mounted on a floor stand with swiveling caster base, or on an overhead trolley, all motor weight is taken from the operator's hands—permitting a larger, more powerful, dust and vaporproof or ventilated type motor with more copper and iron to protect against "overloads" and "burnouts."

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Washington: A. H. Cox Co., Seattle. Construction Equipment Co., Spokane.

Mall PORTABLE POWER TOOLS

# THE WEST ON ITS WAY

plant.... Sunset McKee Co., Oakland, \$69,000 for addition to plant.... Douglas Shaw, Lomita Park, \$60,000 for candy manufacturing plant.... E. T. Reynolds, Chico, \$70,000 for food processing plant.... Yuba City Refrigerating Co., Luba City, \$150,000 for freezing plant addition... Rice Growers Ass'n, West Sacramento, \$194,695 for storage bins.... Shell Oil Co., Stanislaus Co., \$75,000 for agricultural laboratory.... General Brewing Corp., San Francisco, \$146,000 to connect buildings....

MISSION TO BUILD FOUR PLANTS—Mission Dry Corp., Los Angeles have franchised Frederick Z. Reitler and associates to build a plant and operate in the eastern section of Los Angeles as the Mission Orange Bottling Co. The new plant is the first of four new structures planned. Each will feature modern design, and will be equipped with latest automatic machinery.

# COLORADO

AIRPORT CONSTRUCTION STARTS AT GYPSUM—Construction has begun on the Eagle County airport at Gypsum, to cost \$100,000. Hubner Construction Co. is building it. . . .

MEAT PROCESSOR FOR COLORADO SPRINGS—Construction is underway of a building for Decker & Son, a new meat processing company in Colorado Springs. . . .

DENVER FIRM TO MAKE VENETIAN BLINDS—Universal Sales Co., newly organize Denver firm, will make venetian blinds of wood, steel and aluminum at their plant at 747 Santa Fe Drive. Joseph D. and Sam Iskow head the firm. . . .

TIMKEN TO BUILD—The Timken Roller Bearing Co. of Canton, Ohio, will build a plant at Colorado Springs for the manufacture of rock bits. When completed, the plant will have 20.000 sq. ft. of floor space and will employ 125 skilled workers. An eight-acre site has been obtained in the north Colorado Springs industrial area and construction will start as soon as transfer of the land and drawing of plans can be completed. It is expected the plant will be occupied by November 1.



DENVER GETS AVIATION CENTER — The Continental Denver Modification center at Stapleton airfield, Denver, built at a cost of \$3,608,377, has been virtually given to the city and county of Denver without charge, Denver will take full possession of the center with the completion of legal formalities. The 10-day period allowed federal agencies and other priority claimants to file applications for purchase of the center expired and Mayor Stapleton's application on behalf of Denver was the only one received. The property is being transferred under a regulation which gives war-built airport properties to adjoining municipalities on condition the properties be maintained as airports. In case of an emergency the center would revert to the federal government.

CANNING PLANT PLANS DRAWN—Plans have been set for a modern receiving, packing and loading plant at East Forty-fifth Ave. and Madison St., Denver, to house the newly incorporated Colorado Vegetable Exchange. Plans for the all-brick structure which will be located on the Burlington railroad include facilities for cold storage, canning and pre-packaging to stabilize marketing operations and cut down waste in distribution and harvesting. R. E. Harbo has been named general manager of the exchange.

PROCESSING PLANT EXPANDS—A new flotation plant and dehydrating and drying buildings to cost more than \$500,000 are being constructed by the Colorado Feldspar Co. at its processing plant at Parkdale, near Canon City. When the plant is finished it is expected to employ 75 workers.

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CONSTRUCTION SLATED — The Continental Mining Co., near Porthill, is planning construction of a 500-ton sink-and-float plant, and excavation and framework for the building is to get underway shortly. The firm is now clearing a road to its property and plans to move in equipment for installation about May 1.

DRY ICE PLANT AT BOISE—Idaho Calcium Corporation will this summer establish a plant in Boise for production of dry ice and lime. The proposed plant will make use of calcium carbonate taken from extensive deposits near Hot Springs, 27 miles from Mountain Home. The deposit controlled by the corporation covers an area of approximately 800 acres and has a thickness of 20 to 30 feet and contains approximately 75,000,000 tons. Analyses show the deposit is 97.5 per cent pure calcium carbonate. Calcium carbonate from this deposit, it is estimated, will produce 40 per cent dry ice and 60 per cent lime.

LUMBER FIRM RE-TOOLING—The Craig Mountain Lumber Co., which last week purchased 50,000,000 feet of uncut ponderosa pine near Grangeville, is re-tooling its plant at Winchester for the extensive manufacture of lumber by-products. The mill will be the first of its kind in Idaho to utilize virtually all the by-products of milling timber. Paper tissues, pressed woods, composition boards and other by-products will be manufactured. Special equipment is being installed to utilize the extremely low grades of lumber.

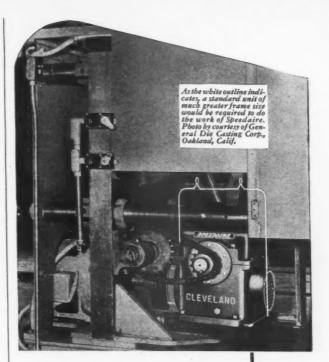
MINE CO. INCORPORATES—Silver Belt Lead Mines, Inc., Wallace, has filed articles of incorporation in Idaho with capitalization of \$350,000. L. J. Randall, Margaret Featherstone and Margaret Denny, all of Wallace, are incorporators.

NEW MISSION PLANTS—Mission Dry Corp. has granted franchise to Gordon Nelson and Richard Poitevin to bottle Mission Orange at Idaho Falls and Pocatello. The concern will begin with the Idaho Falls plant, later building a second plant at Pocatello. . . .

GALENA PROPERTY TO BE REOPENED — Callahan Zinc Lead Co. is planning to reopen the Galena property west of Wallace, which the company took over nearly 25 years ago after its Interstate mine had ceased production. . . .

# MONTANA

FAT RENDERING COMPANY FORMED — Organization of the Cascade Rendering and Soap Co., Great Falls, a new industry to recover materials for the manufacturers of soap, has been announced. The company will be operated as a subsidiary of the Great Falls Meat Co., with business partners being Henry P., Frank B., William W. and Mathew H. Brown. A two-story building already has been constructed four miles east of the city, near the meat company's packing plant. The company will render tallow and grease, disposing of its products to soap manufacturers. Later, the firm probably will manufacture industrial soap. Daily capacity of the rendering plant will be about 24,000 pounds.



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THE increased capacity of Speedaire and the minimum space required for its installation enabled the builder of this Aluminum Die Casting Machine to design a more compact and efficient machine. In addition, Speedaire cost 16% less than a conventional worm-gear unit, saving \$39 on each drive.

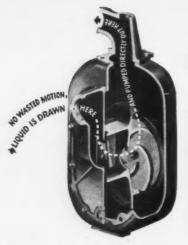
Speedaire is Cleveland's new fan-cooled worm-gear speed reducer. Because it is fan-cooled, Speedaire will do more work—will deliver up to double the borsepower of standard worm units of equal frame size, at usual motor speeds. It can be installed economically on many applications where other types have been used heretofore—giving you the advantages of a compact right-angle drive. Speedaire gives the same long, trouble-free service characteristic of all Clevelands.

For full description, send for Catalog 300. The Cleveland Worm & Gear Company, 3269 East 80th St., Cleveland 4, Ohio.

Affiliate: The Farval Corporation, Centralized Systems of Lubrication. In Canada: Peacock Brothers Limited.



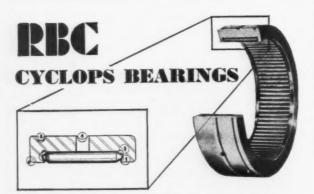
July, 1947—WESTERN INDUSTRY



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# THE WEST ON ITS WAY

# NEVADA

BASIC MAGNESIUM PLANT OFFERED—WAA is making plans for disposal of the \$124,000,000 Basic Magnesium project at Henderson, the largest industrial enterprise in Nevada. Bids are to be asked for about August 1. Inventory of the plant is now being made, and industrial engineers will prepare and submit to WAA an economic and engineering study covering the major problems of disposal, which include possibility of further use of the property as a whole; best methods of disposal, including subdivision for unit sales; possibility of continued operation by the government; and the fair value of the property for sale or lease. Bids should be submitted to the WAA Regional Office at San Francisco. . . . .

OIL CO. MOVES TO RENO—Mission Corp., actively engaged in the discovery, development and production of oil, has moved its executive offices to Reno, where company operations will be directed at 153 North Virginia St. . . .

AIRWAYS TO EXTEND SERVICE—Nevada Airways, Inc., Fallon, Nevada, has asked CAB for a certificate authorizing scheduled passenger, cargo and mail service between Boise and San Francisco, and Boise and San Diego, as well as between Salt Lake City and Salinas.

GOLD DREDGING BEGINS—Natomas Co. has purchased a dredge from Manhattan Gold Dredging Co. of Nevada, a 33 per cent owned affiliate, for use on the Greenan Placers which Natomas operates on a 20-year lease. Dragline operations in shallow ground were resumed on the Greenan lease in 1946, but use of the newly purchased equipment will mark the beginning of gold dredging operations there. It will require several months to put the new dredge into action.

MINING PROJECT AT TONOPAH—Marking the first major development in the Tonopah area in many years, the Tonopah Development Co., represented by M. A. Diskin, Reno, former attorney general of Nevada, is now drilling the first of a series of holes projected over a large section of ground north of Tonopah. O. I. Lavrooshin, mining engineer, is in charge of the work. M. A. Diskin is president of the corporation, and John S. Halley is secretary. . . .

MANGANESE ORE PLANT FOR SALE—Manganese ores, wartime mine and processing plant built near Las Vegas during the war, has been placed on the block by the WAA. The complete ore treatment plant, located off the Boulder City-Las Vegas highway, was built to produce manganese oxide and is being offered for sale or lease. The property consists of an ore preparation plant, a beneficiating plant with a daily capacity of 1,000 tons of crude ore, and 446 acres of land containing one of the largest manganese deposits in the country, estimated to include 3,423,558 tons of 15 per cent ore. The processing plants are necessary because of the low ore content, the WAA said.

# **NEW MEXICO**

AIRPORT FOR LOS ALAMOS LAB—An airplane landing strip is being built at Los Alamos on the grounds of the atomic energy laboratory. It is expected that facilities will be set up for air taxi service from Los Alamos to Santa Fe and Denver.

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Install HAWS Sanitary Drinking Water Fountains and Electric Water Coolers NOW! They're sanitary in the serving of cool refreshing drinking water, and they offer long trouble-free service. You can be sure with HAWS!



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CARBON BLACK PLANTS OFFERED-WAA is offering for sale or lease the carbon black plants operated by Charles Eneu Johnson & Co., Monument, and the Panhandle Carbon Co., Eunice. The Johnson plant, located on a 175-acre site, cost \$2,078,000 and has a designed capacity of 9,000,000 lb. yearly. The Panhandle plant cost \$2,506,000 and has an annual capacity of 15,000,000 lb. Property is located on a 1421/2-acre site. . . .

DRY ICE PLANT BEGUN-Construction is underway at Springer of a dry ice plant, owned by J. O. Lorenzen and associates of Denver, Colo. Capacity at first will be 18 tons a day, but plans include eventual capacity of 100 tons daily. Building is of prefabricated metal. Carbonic material is to be piped to the new plant from a point 14 miles away.

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PLANT TO REOPEN—Oregon Pulp & Paper Co. is expected to reopen the former Silver Falls Timber Co. plant at Silverton, Ore., in July. A new planer is being installed. Estimated capacity of the reopened mill will exceed 100,000 board feet a day. Carl Hoyden, Snoqualamie Falls, Wash., will be superintendent.

MILL BEING BUILT—A sawmill planned for 25,000-ft. daily cutting capacity is under construction at Yoncalla by the Sunshine Lumber Co. The mill will be used to cut 3,000,000 feet of timber east of Yoncallo, and then will be dismantled and moved to a new tract.

LUMBER MILL TO ADD SAW-Plans have been laid for the expansion of the Mt. Emily Lumber Co. mill at Enterprise. Capacity of the mill will be boosted by about 15,000 feet daily. One eight-foot bandsaw will be moved from the mill at La Grande to the Enterprise mill. Several workers will be added to the staff of 25 at the Enterprise mill, and new buildings are planned to replace existing structures. Work on the foundations of the new buildings has already begun. Also planned is a spur track from the Union Pacific right-of-way to the

COOS GETS HUGE LUMBER ORDER-British timber control government agency, importing all timber for the British Isles, has placed an order for 175,000,000 board feet of lumber with mills in the Coos Bay area. It was the largest lumber order ever placed in Coos Bay, the biggest timber exporting port in the world. In addition to the lumber, the British agency will also buy 75,000,000 board feet of ties produced in Coos county, it was said.

MILL CONSTRUCTION TO START—Weyerhaeuser Timber Co. has awarded contracts for construction of a 58-acre millpond and grading of the site of its new mill at Springfield. The mill, to be one of the largest in the state, is expected to be in operation early in 1949.

SHERWOOD PLANT CONSTRUCTION SCHEDULED - The recently organized Sherwood Corp. plans the construction of an estimated \$150,000 furniture manufacturing plant at Sherwood. The one-story structure of concrete blocks is to cover an area 100 by 200 feet. The plant will manufacture bedroom and dining room furniture, under the direction of its president, Walter A. Bowen, Earl Mansfield, vice-president, and Clyde Sanders, secretary-treasurer.

\$297,500 PLANT OKEHED—Permission to construct an estimated \$297,000 packing plant has been granted Armour & Co., Columbia Blvd., at Tyndall Ave., Portland, by the Oregon district office of the OHE, formerly CPA. The Armour plant, on which contractors are now making estimates for construction, will include a 32x90-ft. two-story reinforced concrete plant with brick walls and wood roof, and a boiler room, 16x37 ft. of reinforced concrete.

PACKAGED HOUSE PRODUCED—Timber Structures, Inc., plans production of a new packaged house at its main plant in Portland. An output of five to 10 of the 1½-story Cape Cod colonial design a day is called for. The new type of house is designed for the middle-class market. It will be pre-cut and partially assembled in 4x8-ft, panels. Ayear of construction and marketing tests have been made at the firm's Trenton, N. J., branch plant. Major portion of the factory-built house will sell for under \$2,000.

COLUMBIA PAPER BUYS STOCK-Columbia River Paper Mills has purchased stock and timber in Lincoln County, Ore., held by Werner Timber Co. of Taft. Also involved is personal timber interests of Joseph L. Werner, St. Louis banker and owner of the Werner firm. The transaction involves approximately 12,000 acres of timber and logged-off lands, including well over 300,000,000 feet of timber, plus logging equipment and roads. Consideration involved was not revealed.

BUILDING PLANNED — Preliminary plans for construction of a 200x650-ft. reinforced concrete plant at S. E. Holgate and 25th Ave., Portland, by the Fibreboard Product, Inc., are being prepared.





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Types Rubber Hose • Belting
and Packing.



July, 1947—WESTERN INDUSTRY



"Roger" Dequare cutting cell of fin ished rope to prope length, an employee of the Tubbs Mills for 24 years.

# MEN and ROPE

To win and hold confidence through generations of users means that a product must be uniformly good. In the Mills of the Tubbs Cordage Company old-timers—many with a quarter of a century or more of rope making experience—take a pride of craftsmanship in their work. This combination of MEN and ROPE is another of the plus values that make the name TUBBS stand for quality leadership.

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# THE WEST ON ITS WAY

PAPER CO. JOINS TREE FARM—The Oregon Pulp and Paper Co. has joined the Willamette Valley Tree Farms, a cooperative organization which aims at managing its forest land to keep it in permanent production of raw materials as a basic supply for the various company manufacturing plants. This brings to seven the number of participating timber owners, and to 350,000 acres the area served. Oregon Pulp and Paper holdings include 42,000 acres. . . .

WOOLEN MILLS REDUCE OPERATIONS—Due to the lessening of demand for woolen blankets and woolen goods in general, Portland Woolen Mills has reduced its operations from seven to five days. The plant, which has been on an around-the-clock operation basis since 1941, will continue the three shifts five days. Approximately 70 workmen were laid off, leaving about 500 still employed. Lack of business also 'has necessitated Pendleton Woolen Mills, Pendleton, to discontinue its night shift for first stime since 1941.

OHE APPROVES—Approval for the construction of mill buildings for the Hult Lumber Co., Horton, at Junction City, has been granted by the OHE. Estimated cost is \$78,000. Project includes five buildings of heavy wood frame. . . .

ICE CREAM CONE FIRM EXPANDS—The Maryland Pacific Cone Co., Oakland, Calif., have leased the Heintz Building, 230 E. Burnside St., Portland, where they will manufacture ice cream cones for distribution in the Northwest. . . .

# HATU

ELKO COMPANY TO BUY PLANT — The \$920,000 bid of the Emerald Mining Co. of Elko, Nev., for a surplus aluminum plant at Salt Lake City has been approved by the WAA, which announced that the firm will use it for the processing of uranium oxide. The plant was operated during the war by Kalunite, Inc. Approval is subject to the firm's making "acceptable financial arrangements," the agency said. The firm proposes to use the plant for the refining and processing of beryillium, lead, chrome, mercury and uranium oxide.

SALT LAKE FIRM REMODELS—Fisher Brewing Co. is completing a \$100,000 remodeling project on its Salt Lake City plant. A feature of the job is installation of eight new tanks, each with a capacity of 13,000 gallons. Of steel construction, they will be lined with plastic to keep the brew from contacting metal. Upon completion of the project, the company will have storage capacity for more than 716,000 gallons of beer. Present storage space is 65 per cent of that figure. The project is unique in that every phase of it was handled in Utah. The sheet metal was produced at Geneva Steel Co. and the tanks were made by the Salt Lake plant of Lang Co. Raw materials all were obtained in Utah.

ELLIOTT WINS CONTRACT—Elliott Manufacturing Co. has been awarded a contract to furnish a new 7,500 kw. turbo-generator for the Provo, Utah, municipal power plant at a cost of \$255,380. Elliott quoted its best delivery date at 450 days.

STRUCTURAL STEEL BIDS LOW—Structural Steel & Forge Co. of Salt Lake City was low bidder at \$81,400 for the U. S. Vanadium plant, a Salt Lake installation placed on sale by WAA as surplus property. The company indicated in its bid that the plant would be used for making steel products, particularly for the building and construction industry. The Vanadium plant properties in Salt Lake consist of approximately three acres consisting of two manufacturing buildings, a change room, a laboratory and office building, a warehouse and two smaller buildings. All structures are one-story and over 20,000 sq. ft. of floor space. . . .

SUPPLY CO. BUYS SITE—Western Auto Supply Co. has purchased a warehouse site at Ogden, from the Ogden Depot & Railroad Co. Contract for construction has been awarded to the James Leck Construction Co. of Minneapolis, Minn., at an estimated cost of \$200,000.

URANIUM FOUND IN UTAH—Extensive new deposits of camotite, a uranium-bearing ore, have been discovered in southern Utah. The Arizona Department of Mineral Resources reported an assay showed a content of 1½ per cent uranium, which it described as "a very high uranium content." Uranium is the basic ingredient in the atomic bomb.

GYPSUM COMPANIES SHARE POWER COSTS—U. S. Gypsum Co. and Western Gypsum Co. will share equally the cost of new Telluride Power Co. lines under schedules for extended service to their new plant at Sigurd, the Utah Public Service Commission has ordered. The two companies will equally divide the power as it becomes available. The power agreement is expected to pave the way for plant construction being planned by both companies. . . .

# WASHINGTON

FLOUR MILLS SOLD—Fisher Flouring Mills, Tacoma, has purchased the Olympia Feed Co. Seller was Fred Holm, who has operated the firm 24 years. Price was \$125,000.

NEWSPRINT PLANT OPERATING—West Tacoma Newsprint Co. plant, supplying paper to 14 Coast newspapers, cooperative owners of the company, now has production under way. The plant has a capacity of 60 tons a day and the company has in sight a four-year supply of pulp wood. The plant was formerly owned by Cascade Paper Co. and was converted from a book mill to a ground wood mill.

REYNOLDS SUSPENDS LONGVIEW OPERATIONS — Reynolds Metals Co. has suspended operations at its aluminum ingot plant in Longview to complete improvements which will require about a year. The company said it has sufficient production at its three other aluminum ingot plants to meet current demand.

PAPERBOARD CO. EXPANDS—Pacific Paperboard Co., Longview, plans an expansion program to cost in excess of \$2,000,000, requiring 300 additional employees, which will bring the firm into the newsprint field. An additional paperboard machine will also be installed. The newsprint machine, with a capacity of 100 tons a day, is to be in operation by October, 1948. This machine, to cost \$950,000, will not be purchased by the company, but by a group of western newspapers, most of whom operate in California. They will take the entire output of the machine.

SNOQUALMIE TIMBER SOLD—The St. Regis Paper Co., Tacoma, has been awarded a contract for sale of approximately 5,700,000 feet of timber located on 640 acres of Snoqualmie national forest.

COMPANY OFFERED WAR PLANT — The Spokane magnesium plant which was built by the government has been offered to the American Chrome Magnesium Co., New York, for experimental operations, according to the WAA. An offer of \$8,000,000 by the company for purchase of the plant had previously been rejected.

MILL PROPOSED AT KENNEWICK—Pillsbury Mills, Inc., Minneapolis, Minn., is considering establishment of a complete flour, cereal and feed milling operations with large grain elevators at Kennewick. The firm selected the Kennewick area as the site for the large operation because of advantageous rail transportation eastward and its proximity to large grain areas and its better competitive features.

FOOD INDUSTRY FIRM TO EXPAND—Food Machinery Corp. in Yakima reports that the land purchased by the corporation from the Union Pacific Railway will be the site of a new building for the concern.

MILL TO COST \$100,000—Construction of a \$100,000 feed mill for the Barnes Grain & Feed Co. on S. Second Ave., between Walnut and Spruce Sts., Yakima, is planned. The mill will be of concrete block walls, approximately four stories in height and equipped with a vacuum dust removing and sprinkling system.

WENATCHEE ELEVATOR PLANNED—A building permit has been issued to the Centennial Milling Co. for construction of a \$75,000 reinforced concrete grain elevator on a S. Wenatchee Ave. site, Wenatchee.

PAINT FIRM WILL EXPAND—In preparation for another addition to its expansion program, already under way, the Preservative Paint Co., Seattle, has purchased 30,000 sq. ft. of property adjoining its plant at 5410 Airport Way as a site for a modern retail store, with parking space for customers. A \$12,000 addition to the office and shipping-room facilities at the Preservative Paint plant is now under construction.

FORGE SHOP PLANNED—John Deer Lindeman Co. of Yakima has confirmed reports that the company plans to build a forge shop north of the plant's hop picker building to contain 14,000 sq. ft. The firm has called for bids on the contract to construct the building which may cost \$75,000 to \$100,000.

\$100,000 FREEZING PLANT PLANNED—Funds totaling \$100,000 to build a new freezing and storage place at Edmonds have been raised by the Northwest Furbreeders Cooperative. The new plant will provide freezing facilities and storage space for 1,000,000 pounds of processed fish trimmings, which will be used to feed mink and fox in Washington, Oregon, Idaho and Utah, it was announced. The cooperative sells feeding items and other supplies at cost to fur farmers in the four states.

AREA TO BE RECLAIMED FOR INDUSTRIAL SITES—In one of Seattle's biggest industrial site developments in more than a decade, the Milwaukee Road will reclaim more than 50 acres of Duwamish tidelands in a \$500,000 long-range project. Dredging, grading and filling, near the Duwamish Waterway and Oregon St., will involve movement of about 1,000,000 cubic yards of earth. Spurs and trackage will be included to afford rail connections. . . .

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BEALL TOOL CO. (Div. Hubbard & Company)
EAST ALTON, ILLINOIS

July, 1947—WESTERN INDUSTRY

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# **NEW PARTS CLEANER**

Kelite Formula 555

Its grease penetrating capacity...and carbon softening qualities...remove deposits by cold immersion that were formerly thought impossible. Safe on all metals—safe from fire—safe for the skin!

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# Walton SPEED REDUCER



Locally Made for Western Industries

Capacities: 1/4 HP to 71/2 HP Standard Ratios: 6:1 to 96:1

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He started as a personal producer after World War I. Developed his own sales techniques. Graduated to Sales Manager. Acquired ability to effectively supervise men. Built new, high sales totals within a highly competitive consumer goods field. Broadened his scope to include policy-making, for both sales and merchandising. Demonstrated his sound planning and performance by keeping his organization in a position of cosistent leadership through bad times and good. Lowering of distribution costs has been a field in which he has blazed the way, and has attained nation-wide recognition. He knows the Pacific West up and down. He wants to headquarter in the San Francisco area. He invites preliminary correspondence either direct or through a third party. Write Box Number 521, Western Industry, 503 Market St., San Francisco, California.

# THE WEST ON ITS WAY

MONSANTO BEGINS \$1,000,000 PROJECT—Construction is about to start on Monsanto Chemical Co.'s \$1,000,000 building expansion program at Seattle, which includes a wood treating products plant. The site is between the Duwamish River and Pacific highway on E. Marginal Way. . . .

WESTERN AIR TO SERVE SEATTLE—Western Air Lines has received permission from CAB to extend its service to Seattle by way of Portland, Ore. At present, United Air Lines alone serves the Pacific Northwest. . . .

OHE APPROVALS IN SPOKANE AREA—Leavenworth Fruit & Cold Storage Co., Leavenworth, cold storage and packing shed, \$162,-350; Peshastin Fruit Growers Ass'n, Peshastin, cold storage plant, \$160,000; U. S. Bureau of Reclamation, Coulee Dam, foundation work on which a machine shop will be built, \$100,000. . . .

OHE APPROVALS IN THE SEATTLE AREA—Sicks' Seattle Brewing & Malting Co., 3100 Airport Way, foundation construction, \$56, 300. This is part of the brewing co.'s \$1,000,000 expansion program. Machinery and equipment estimated at \$550,000 will be installed... Puget Sound Navigation Co., Colman Ferry Bldg., heavy wood construction on Peoples Wharf at Port Angeles, \$60,000... Centennial Flouring Mills, Granger, flour mill warehouse, \$58,000... Associated Grocers Co-op, distribution warehouse at 1916 Occidental Ave., \$350,000... Grace Hinkley Est., paper-box manufacturing plant at 1257 Westlake Ave. N., \$60,000... Lee & Eastes, Bayview & Airport Way, an auto freight service and repair building, \$75,000. Firm plans to do all major overhaul work and body repair for the fleet of trucks operating in Washington and Oregon....

MILLING CO. TO EXPAND — The Preston-Shaffer Milling Co., Walla Walla, has applied for a permit to build a \$95,513 addition to the Peacock flour mill at Freewater. The addition would have a 140,000-bu. capacity. . . .

BATTERY CO. FIRST TO OPERATE—The first new industry to locate and start operations on the recently filled portion of the Tacoma "Tideflats" is the Sound Battery Co., makers of new automobile, truck, bus and marine lead storage batteries. . . .

WAA SELLS COKE AND COAL FACILITIES—Two facilities operated in Washington during the war by Wilkeson Products Co.—a coke plant at Tacoma and coal mine facilities at Wilkeson—have been sold by WAA to Richard E. Randall, Seattle, for \$600,000, the appraised fair value of the two properties. Facilities have a production capacity of about 100,000 tons of coking coal per year...

PETROLEUM PLANT TO BE ENLARGED — General Petroleum Corp. is planning to spend \$2,000,000 for enlargement of the Harbor Island bulk petroleum plant at 1710 - 16th Ave., S.W., Seattle. Included in the plans are an increase of 1,450,000 gallons storage capacity, construction of new warehouse, supply, maintenance and office buildings. In addition, an extensive program of waterfront and land improvement has been jointly undertaken with the Texas Oil Co., which occupies adjoining property. . . .

# WYOMING

STANDARD OF INDIANA EXPANDS AT CASPER—Standard Oil Co. of Indiana has begun work on a multi-million dollar expansion program at Casper which includes construction of 14 new brick buildings and alteration of 12 existing structures of the Casper refinery. A new cracking unit to be constructed will produce a higher percentage of petroleum products and ease a production loss expected in the gradual lessening of high grade green crude oil.

UTILITIES MERGE—A merger has been effected between the Sheridan County Electric Co., whose headquarters are at Sheridan, and the Montana-Dakota Utilities Co., whose headquarters are at Minneapolis. Applications for approval of the merger have been filed with the Federal Power Commission at Washington, D. C. T. W. Hughes will continue as head of the electric department, and L. M. Wells as head of the gas department. Headquarters will be combined. . . .

AIRLINE OPENS STEWARDESS SCHOOL—United Airlines has set up a "finishing" school for its stewardess candidates at Cheyenne. The new school is operating in connection with the move of United's entire educational division from Chicago to Cheyenne. Facilities accommodate 300 trainees in various job training programs at one time....

# TRADE WINDS NEWS ABOUT THOSE WHO DISTRIBUTE AND SELL INDUSTRIAL EQUIPMENT AND MATERIALS

H. L. Pehrson appointed manager of the West Coast sales of Ladish Co., with offices in Los Angeles. . . .

W. T. Kellogg, Jr., formerly personnel mgr. of Redwood City, Calif., plant of National Motor Bearing Co., Inc., appointed replacement div. sales representative in the Pacific Northwest with headquarters in Portland, succeeded by James A. Batchelor.



W. T. Kellogg, Jr.

Material Handling Association of Southern California elected: Glenn A. Harshbarger, Frank E. Witte Co., as president; Stanley E. Morris, Stanley E. Morris Co., vice-president; J. E. Badgley, Southern California manager, Western Industry, secretary-treasurer; and Milt Canfield, Jr., M. E. Canfield Co., a director. . . .

C. W. Main has been appointed a field representative of the Plomb Tool Co., with head-quarters in Denver. His territory includes Colomdo, Wyoming and parts of South Dakota and Nebraska. J. J. Buhler is regional sales mgr.

The West-Hitchcock Corp., distributors of White trucks and farm equipment, have opened their new plant in Klamath Falls, Ore., and are featuring delivery in a company plane to speed sales and service operations.

Frank W. Sutton, industrial engineer, has resumed private practice with headquarters at 2984 Wilshire Blvd., Los Angeles, after serving in the Army Ordnance Dept. . . .

New York Belting and Packing Co. names Edward J. Hallan Northwest sales representative with headquarters in Portland. . . .

Ralph A. Geyer has been appointed manufacturers' sales representative in the Pacific Northwest for Firestone Tire & Rubber Co. . . .

Vittetow, Inc., 1439 Detroit St., Denver, Colo., appointed exclusive representative for Michigan Tool Co. of Detroit, Mich., makers of gear production equipment, for the states of Colorado, Utah, and Wyoming. . . .

The Andersen Engineering Co., 2032 Santa Fe Ave., Los Angeles, now represents the Claude B. Schneible Co. of Detroit, Mich., in the entire state of California. Company makes dust and fume control and ventilating equipment. O. W. Andersen is president.

Alfred D. Howard, formerly assistant sale promotion manager of Servel, Inc., has been appointed assistant general sales manager of Kaiser Fleetwings Sale Corp. of Oakland, Calif., and Bristol, Pa. Paul L. Yager is general sales manager. . . .

Edward D. Maltby Co. appointed exclusive distributors in Southern California for Truarc Retaining Rings, which are manufactured by Walde Kohineer, Inc., of Long Island City, N. Y.

Howard Morrison Corporation of 11 Park Place, New York, announces formation of Howard Morrison (India), Ltd., with headquarters at 26 Frere Road, Bombay, to promote trade potentialities between the Western section of the United States and the Far East.

E. H. Vockrodt, former Army Air Force lieutenant-colonel, has been appointed Pacific Coast representative by Alloy Steel Products Company of Linden, New Jersey, manufacturers of corrosion resisting valves and fittings. Mr. Vockrodt is located at 3757 Wilshire Boulevard, Los Angeles.



Richard W. Morsch has been appointed new mgr. of the Los Angeles office of J. O. Ross Engineering Corporation, succeeding W. A. Schoenbeck, who is returning to the New York office. Mr. Morsch has been associated with Ross Engr. for the past 10 years at the New York office.

Richard W. Morsch

Pacific T & T Co. promotes J. H. Cassel, Yakima mgr., to commercial supervisor for the Western division at Seattle, succeeded at Yaki-

ma by H. G. Searles of Seattle. G. E. Giffin, Lewiston, Idaho, mgr., becomes district sales mgr. for eastern Washington and V. M. Johnson, Colfax mgr., becomes commercial agent at Seattle. . . .

The Thomson Pump and Equipment Co., Los Angeles, has been purchased by the Watrous Company, St. Paul, Minn., with Mr. Thomson joining the staff as sales manager.

R. A. Brow, sales engineer with Pacific Coast Industrial Equipment Co., has been appointed Western agent for the Wean Equipment Corp. of Cleveland. Wean Equipment designs and builds equipment for steel mills.

Minneapolis-Honeywell Regulator Co. has opened a branch office in the Phoenix Bldg., Butte, Montana. James A. Reynolds transfers from the company's Seattle office to become mgr. Calif. . . .

Under a newly adopted regional set-up for the field organization of the Allis-Chalmers general machinery division, branch offices in the new regions become district offices. In the Pacific region F. V. Sams, F. Harvey Searight, U. E. Sandelin remain as managers of the Portland, San Francisco and Seattle district offices, respectively, reporting directly to A. J. Schmitz, manager of the region, which covers California, Nevada, Oregon, Washington, northern Idaho and part of Montana. C. W. Schweers becomes manager of the Los Angeles district office, succeeding A. D. Brown, transferred to Washington, D. C. I. C. Matheson, formerly with the Tampa district, transfers to Los Angeles where he will specialize in the handling of utility business for the company in that area. . . .

The Cleveland Supply Co., West Coast distributors for Cleveland Pneumatic Tool Co., Aircraft Fitting Co. and other industrial accounts, has moved from 504 W. Washington Blvd., Los Angeles, to larger quarters at 8709 Santa Monica Blvd., Hollywood. E. W. Cleveland is president and W. A. Dice, vice-president and general manager. . . .

Neil Drake heads the staff of resident engineers in the new Los Angeles office of Drake, Startzman, Sheahan, Barclay, Inc. of New York City. The Los Angeles office is located at 5816 Wilshire Boulevard.

• New officers and directors of the Material Handling Association of Southern California for 1947-48 are: front row, left toright, Stanley E. Morris, Stanley E. Morris Company; vice-president; Glenn A. Harshbarger, Frank E. Witte Company, president; J. E. Badgley, Western Industry, secretary-freasurer. Second row, left to right, Milt Canfield, Jr., M. E. Canfield Co., director; and T. A. Fitch, Irving G. King & Co., director.



July, 1947—WESTERN INDUSTRY

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# METHODS MATERIALS EQUIPMENT

That Will Help
To Cut Your
Production Costs

578

### For Protection Against Fires

A new method of combatting the chimney-like spread of gases and fumes through burning buildings has been devised as a joint project of the Otis Elevator Co., Westinghouse Electric Corp. and the Grinnell Co., Inc.

The technique consists of a set of sprinklers which produce a thick curtain of water around the stairway opening and cools the hot gases which reach it. An exhaust fan connected to collection ducts which surround the stairway opening draws off all smoke and fumes which get past the water curtain. Tests have shown that the combination of fan and water curtain keeps stair passages cool and free of contaminating gases.

In addition, fresh air rushing down the

In addition, fresh air rushing down the stairway through a roof opening replaces the hot gases being sucked out of the fire area, reversing the normal upward flow

of hot air.

579

# Wheelbarrow That Does the Work of Five

Production of a mechanized wheelbarrow capable of carrying a one-ton load at speeds up to 15 miles an hour has begun, and Novo Engine Company, Lansing,





As the exhaust-water spray protective system was tested, a technician was able to stand on the stairway measuring the down-draft, while a roaring fire blazed about him.

Mich., its manufacturer, predicts that it will do the work of five ordinary wheel barrows on short incline hauls and the work of eight on longer hauls.

Called the Scootruk, it is virtually a miniature dump truck, equipped with airplane type tires, 6 h.p. air-cooled engine, four speed transmission and reverse. Dumping is controlled from the driver's seat or from the side of the bucket. Can be used for scaffold or second and third-story work, and runs even on loose sand without special roads or runways.

580

# Longer Life For Tamping Bars

The life of alloy steel ballast tamping bars may be extended as much as 100 per cent, if bit end is coated with hard-facing alloy, according to the Oxweld Railroad Service Co., of New York.

A thick coating of Hascrome iron-base alloy is applied over the end of the bit and up the sides for a distance of about one inch. This alloy is a work-hardening metal having good abrasive resistance and high resistance to impact. In depositing the alloy, supplied in rod form, a slightly excess acetylene flame should be used to bring the base metal to a sweating heat.

Metal should not be allowed to puddle. No after treatment is required after the bar is built up.

581

# Electrical Instrument Does Many Jobs

General Electric Co. is making a new AC load visualizer for use on single-phase and balanced polyphase systems which also does the work of many other instru-

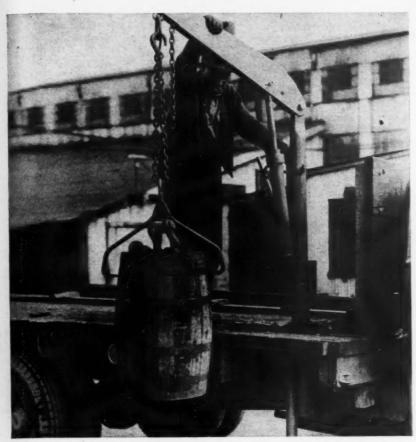
Besides serving as a standard 0-2.5/5amp. ammeter and a 0-150/300/600-volt voltmeter, the AF-1 can be used with the calculator furnished to determine watts, vars, volt-amperes, and power factor for load surveys, induction motor tests, reactive - power studies and power - factor checks on power and lighting circuits.

582

# Night Cooling For Industrial Buildings

A new air conditioner which draws cool night air through the building is now being developed for industrial plants by the ILG Electric Ventilating Co., Chicago.

Originally designed for home comfort during heat waves, economical night-cooling will soon be ready to go into the factory with the night shift, and leave the



 By modifying their standard one-ton floor crane, Ruger Equipment Co. has developed a hydraulic crane for use on trucks, which offers high lifting range with easy control.

plant well ventilated and comfortable for daytime workers. Fans draw in cool air from open windows, then dispel it, along with dust, fumes and bad air.

# Mobile Floor Crane Aids Material Handling

An easily rotated truck crane with foot brake to prevent swinging under load, is the new modified version of the Ruger Equipment Company's standard one-ton model.

This Cleveland manufacturer explains that the new crane incorporates a combination of hydraulic piston and cantilever boom for high lifting range, as in the original model. An adjustable supporting member, to prevent deflection of truck springs, is a part of the crane, and can be swung up and fastened out of the way when truck is in motion.

# New Telescopic Gravity Conveyor

Recommended for conveying packaged goods, but adjustable to many jobs, is a new telescopic gravity conveyor which can be quickly folded to a 10-foot length.

It comes in three sizes, 10 to 20 ft., 10 to 30 ft., and 10 to 40 ft.; has adjustable

legs, castors for easy moving, and a pressure break lock to hold it firm while in use. The Wilkie Co., Philadelphia, Pa., the maker, labels it the Wilkie Telescopic Conveyor.

# Doctor's Accuracy For Arc Welders

Inert arc gas welders are now offered a gas control flowmeter originally designed for and used by the medical profession.

It is the Victrometer made by the Victor Equipment Co., San Francisco. A sin-

gle control wheel gives any fractional flow desired with accuracy and maintains it uniformly. Featured is a large indicator, easily read from a distance, and distinct calibrations visible from both front and back.

### 586

# Truck Loading Made Easy

By using pallets and a roller skate type conveyor the Electric Storage Battery Co., Philadelphia, Pa., has found it can double the availability of its highway trailers and increase four times the volume of materials handled.

Pallets are sized to conform to the inner dimensions of the trailer body. They are handled by electric fork trucks outside the trailer, and by conveyors laid on the trailer floor inside. Company says the system has reduced loading time from 360 man-minutes per operation to 46, a timesaving of 87 per cent.

# Universal Type Motor Made Light, Compact

Built compactly for easy adaptation is a new two hp. universal type motor made by the Electrical Engineering & Manufacturing Corp., Los Angeles.

Motor weighs 22 lb., measures 143/4 in. long, five in. in diameter, Especially adaptable for direct connection because of high speed (5,700 rpm) at which it is designed to operate, on 115 volts, AC or DC, and on 25 to 60 cycle.

### 588 Metallic Packing To Stand the Strain

An improved metallic packing which completely eliminates leakage while maintaining flexibility, has been built by Rodpak Manufacturing Co., San Francisco, to hold up to three times as much pressure as the earlier type built by the company.

The new floating seal packing is speedy and foolproof to install, and is adapted



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to both rod and plunger type operations, all types of compressors, steam units, hydraulic units—in fact, most units having rods, shafts, liners or plungers.

589

### New Five-Ton Model Dollies

Of interest to plants, railroads or truck lines are the new "five-tonner model" skid-roll dollies with adjustable extension



bar. These skid-roll dollies, by Techtmann Industries of Milwaukee, carry heavy freight machinery, dies, etc., a few inches from the floor, reducing possibilities of accidents to a minimum.

590

## Less Power Loss With New Conductor

A new type water-cooled flexible conductor for transmission of high power, high frequency current has been an-



nounced by Titeflax, Inc., Frelinghuysen Ave., Newark 5, N. J. Developed by Titeflex research engineers, this new conductor is water-cooled for minimum losses at high power, insulated for high-frequency currents, flexible and tough, having excellent water resistance. It is particularly adaptable to high-frequency heating equipment and other equipment carrying a substantial amount of power at high frequency.

59

# Easy Loading With New Truck

The new Truax two-ton lift truck on pneumatic tires is designed with an eye to economy, safety, and speed in material handling.

Designed and engineered by Truax Machine & Tool Co., Seattle 8, Washington, the Truax makes box car loading and unloading easy, even over unpaved surfaces.

Rugged, simple mechanism cuts operating costs. Fewer working parts have less wear, reduce upkeep. Heavy or fragile loads ride on pneumatic tires. 592

### New Electrode Holder For Welders

Manufacturers who use electric welding will be interested in a new electrode holder made by Tweco Products Co., Wichita, Kansas, as a companion to their larger holders.

Identified as A-316 Twecotong, its general specifications are: Capacity 1/16 in. through 3/16 in. electrodes; 250 amperes; weight, 18 oz.; length, 9 in.; palm span, 23/4 in.

593

# Aluminum Wheelbarrow Now Available

The Bordeaux Engineering Company, 649 South Olive Street, Los Angeles, have ready for immediate shipment a tough,



practicable, light - weight wheelbarrow. This barrow has a heat-treated aluminum alloy frame, steel legs, and a solid rubber or inner tube tire.

The wheel is roller bearing and composed of 14-gauge pressed steel, in two pieces bolted together with six bolts, easy to assemble, convenient to use.

594

# A Steam Generator With Wide Application

Stressing its wide industrial application, the Cronholm Manufacturing Company, Portland, Ore., has swung into production of a new automatic electric steam gener-



ator, which carries the trade name Vap-O-Lec.

One hundred pound steam pressure is available in three minutes after the switch is turned on, and operating pressures of from five to 100 lb. are possible. Unit requires but eight feet of floor space.

Company suggests it is particularly suited for use in bakeries, pressing shops, food processing, dairies, diversified timber operations.

595

# New Alloy Passes Strength Tests

Approved by highway departments and U. S. Engineers, the new high strength steel alloy now being rolled by the Caine



Steel Co., of Chicago has been proven, by tests, to be 25 per cent stronger than the same piling made of mild steel.

In a series of bending, compression and tensile strength tests, the new alloy is not only stronger, but has double the corrosion resistance, and an indicated life of twice that of mild steel piling.



596

# Heavy Barrels Get the Run-Around

A new portable carrier for heavy drums and barrels which operates like a wheelbarrow eliminates needless handling, lifting or changing of position.

To pick up a drum the operator rolls the "Handy Van" to a vertical position, slides a catch over the rim, lowers barrel and van to a horizontal position, and wheels it away.

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# HELPFUL LITERATURE

For the plant operator who wants to keep informed

### 2179

Latest Developments in Science and Indus-try—Librarians, technical and scientific work-ers will be especially interested in the new cata-log issued by the Chemical Publishing Co., Inc., which lists the latest books on chemistry, technology, physics, general science, mathematics, engineering, foods, drugs and cosmetics, metals, plus college and other textbooks. Chemical Publishing Co., Inc., Brooklyn 2, N. Y.

Pion Your City's Future—The publication entitled "Forecasting a City's Future" is based on an economic study of the Sacramento area, on an economic study of the Sacramento area, sponsored by the postwar planning committee of the Sacramento Chamber of Commerce and carried out by the Commission's technical staff, as a service to California communities in planning for their economic development. State Reconstruction & Reemployment Commission, Sacramento, Calif.

### 2181

**Principles of Industrial Drying**—The 22-page illustrated bulletin No. 131 describes the principles and processes of Ross industrial dryers and pictures them in use in industries such as plastics, pulp and paper, textiles, drugs, caramics and rubber-latex. The Ross Airay system combines and complements the infra-red radiation with air circulation. J. O. Ross Engineering Corp., New York 17, N. Y.

Industrial Markets of the West—This 54-page booklet, "How to Win the Markets of the New West," highlights with pictures and statis-tics the market potentials of the 11 Western states and their component sales areas, showing their desirability for the manufacturer who is contemplating Western operation. The Metro-politan Oakland area is shown as the most favorable central location for quick, low-cost distribution. Metropolitan Oakland Area, Oakland 12, Calif.

Problems of Migrant Labor — This 58-page report, "Migrant Labor—A Human Problem," by the Federal Interagency committee on migrant labor urges coordinated governmental and citizen action to improve the substandard working and living conditions among the Nation's migrant laborers in both industry and agriculture. It proposes improved procedures for recruitment, transportation and utilization of the seasonal laborers, and for furnishing them adequate housing, health, education and welfare services. U. S. Dept. of Labor, San Francisco 2, Calif.

# 2184

Movie on Collective Bargaining. "Your Stake in Collective Bargaining." Public Affairs 35 mm. filmstrip Packet No. 3, is prepared to encourage pro and con discussion of current ideas and proposals about collective bargaining and labor-management relations. The complete packet—containing film, script, and Public Affairs pamphlet which lists titles of complete Seties—is \$2.50 including mailing charges. Pub. series—is \$2.50 including mailing charges. Public Affairs Committee, Inc., New York 16, N.Y.

### 2185

Aid to the Study of Oil-First in a series of Aid to the Study of Oil—First in a series or seven Shell films on the history of oil is "Prospecting for Petroleum," a 23-minute animated movie which tells the history and development of methods used in oil prospecting—from guesswork to science—produced in color and sound. Available without cost by request to Shell Oil Co., Inc., San Francisco 6, Calif.

### 2186

About Grinding Wheels — The Norton Co. has published a booklet illustrating each type of grinding wheel for foundries, steel mills, forge and welding shops with specifications, list prices and table of speeds included. Norton Co., Worcester, Mass.

### 2187

All About Pallets—Just published is a color-ful folder on the subject of pallets, providing valuable technical data on the construction and use of Generalift pallets. Address request to General Box Co., Chicago, Ill.

The Story of Marine Magnesium—Just published is a 22-page brochure, "Magnesium Salts From the Sea." Through charts and illustrations it presents the entire process of extracting magnesium salts from the sea, from which all magnesium products, including metal, are made.

Marine Magnesium Products Corp., South San Francisco, Calif.

### 2189

How to Use V-Belts - Veelos V-belt catalog describes features of adjustable V-belt, construction details, illustrates how to couple and uncouple, measure and install. Also includes engineering data and 13 pages of application photos showing installations in wide variety of industries. Manheim Mfg. & Belting Co., Man-

### 2190

New Data on Indicators-Information on the selection and application of d-c selsyn three-wire system indicators and transmitters is contained in a new bulletin, GET-1304, now available from the General Electric Co., Schenectady, N.Y.

### 2191

Processing of Metals — Rigidized metal, a product of an exclusive design-strengthening and texturizing process that is applicable to both ferrous and non-ferrous sheet and strip, is described in full in a new bulletin now available, when requested on company letterhead, from Rigid-Tex Corp., Buffalo 3, N.Y.

### 2192

New Accounting Method—A radically new, yet basically simple system of accounts receivable control is presented in the new 20-minute, full color, sound motion picture, "Saving with SUIAP," available to interested groups or to officials of individual companies upon request to Systems Division representatives of any local Remington-Rand office.

Who's Who in Labor-A book which presents for the first time in America, comprehensive, accurate, and authentic information about the men and women who lead and deal with labor. Price per copy is \$12.00 to The Dryden Press, New York 16, N.Y.

The Resistance Welding Process—Two new bulletins describe the Sciaky "Three-Phase" resistance welding process. Bulletin 137-A is a summarization of the operation and advantages to be gained, while bulletin 136-A offers a full description for the technically-minded. Sciaky Bros., Inc., Chicago, Ill.

### 2195

New Time Cycle Controllers-Bulletin No. C305 describes in detail the new line of model C500 impulse-sequence time cycle controllers with illustrations to show principle of operation and method of use on typical plant processes. The Bristol Co., Waterbury 91, Conn.

Modern Gas Carburizing — A new 16-page bulletin, SC-134, tells how modern gas carburizing is accomplished and explains the related processes of suspended carburization, car-bon restoration, and dry cyaniding. Charts, graphs, and tables of an engineering nature as well as many photomicrographs of steel pro-cessed by the different heat treatments are included. Surface Combustion Corp., Toledo 1, O.

New Valve Cross Reference Chart-This new booklet contains a complete listing of OIC valve numbers in order, with their description, and is designed to help select the right valve for the right job. Ohio Injector Co., Wadsworth, Ohio.

# 2198

Latest Steel Institute Manuals—Steel Products Manual, Section 23, on "Tolerances for Alloy Steel Sheets and Strip" and Section 4 covering "Carbon Steel Structural Sections" are now available for 25c from American Iron and Steel Institute, New York, N.Y.

### 2199

An Outstanding Development — The new "oxyarc" way for cutting the tough ferrous and non-ferrous alloys is described in detail and illustrated in the April Victor "Weld" published by Victor Equipment Co., San Francisco, Calif.

Machines For Forest Conservation — The defiberizer and inter-plane grinder, two machines designed to help conserve forest products by using waste timber, are described and portrayed in a new bulletin 26B6428 now available upon request from the Allis-Chalmers Mfg. Co., Milwaukee 1, Wis.

Portable Pump Advancement — The 2-in. centrifugal pump, Flomax 10, is compact, light weight, readily portable, and ideal for use by municipalities, public utilities, industries and in the mining, agricultural and construction fields. For descriptive bulletin No. 4000 write Marine Produces Co., Detroit 14, Mich.

### 2202

The Pacific Northwest's Plan for Forest Conservation—In a new book, "More Tim-ber," the joint committee on forest conserva-(Continued on page 98)

(Continued from page 97)

tion, representing the West Coast Lumbermen's Assn. and the Pacific Northwest Loggers Assn., presents with attractive illustrations the program of private forest land owners of the Pacific Northwest which will insure a perpetual supply of forest products from that region. Copies may be obtained by writing West Coast Lumbermen's Assn., Portland 5, Ore.

### 2203

New Battery Charger-Bulletin, B-210, describes the new single-circuit battery charger for servicing one 15 or 16-cell, 350 to 500 ampere-hour lead battery, which combines the advantages of standardized production with specialty engineering. The Electric Products Co., Cleveland 12, Obio.

### 2204

All Types Hand Cranes -- 27-page bulletin No. 1000-A illustrating a wide variety of hand cranes, describes safety factors, construction features, capacity ratings, unit parts, and replacement parts. Numerous engineering drawings and specifications are shown. Downs Crane & Hoist Co., Los Angeles, Calif.

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# INDEX TO ADVERTISERS THIS ISSUE

Α	K
Acousti-Celotex Distributors in the West 16	Kaelin Electric Company 92
American Wheelabrator & Equipment Corp. 22	Kelite Products, Inc 92
	King, Irving G., & Company
В	
Baldwin Duckworth Division	M
Chain Belt Company 20	Mall Tool Company 86
Beall Tool Company Division	Maltby, Edward D., Company 88
Hubbard & Company	Marlow Pumps 88
Bethlehem Pacific Coast Steel Corp 12	McCoy, Roger D
Blaw-Knox Division, Blaw-Knox Company 23	McDonald, B. F., Company
	Milam, Wallace H., & Company 98
C	Modesto Terminal Company 84
California Barrel Company3rd Cover	Morrison, Howard, Corporation
California Spring Company, Inc	0
California Steel & Construction Co 91	Oakite Products, Inc
Cleveland Worm & Gear Company 87	Oakite Froducts, Inc
Cold Metal Products Company	•
Coldwell, Banker & Company 90	Pacific Chemical Company Subsidiary,
Colson Equipment & Supply Co	American Marietta Company Subsidiary,
Columbia Steel Company	Pacific Gas & Electric Company
Conveyor Company, The	Pacific Telephone & Telegraph Company 81
Crocker First National Bank	
Cunningham, M. E., Company	Permanente Metals Corporation 6 & 7
Curtis Pneumatic Machinery Division,	Petley, Incorporated
Curtis Mfg. Company 85	Philco Storage Battery Division, Philco Corporation
Curtis Imig. Company	Philico Corporation
D	R
Detroit Hoist & Machine Co	Revere Copper & Brass, Inc
	Ridge Tool Company82 & 83
Dravo Corporation	Ruger Equipment Company, Inc
Ducommun Metals & Supply Co	Ryerson, J. T., & Son, Inc
Ducommun Merais & Supply Co	Kyerson, J. 1., O Jon, Inc
	S
	Seastrom Mfg. Company
Economy Engineering Company 72	Sharpe Mfg. Company 86
Electric Storage Battery Co 4	Shell Oil Company, Inc
	Signode Steel Strapping Co
,	Smoot-Holman Company
F. A. B. Mfg. Company	Square D. Company
Fishstrom Staple Company 80	Standard Oil Company of California
Fruehauf Trailer Company 71	Stephens-Adamson Mfg. Company4th Cover
Fuller, W. P. & Company 14	Stuart Oxygen Company
G	T
General Chemical Company	Thomas Truck & Caster Company
General Paint Corp	Tide Water Associated Oil Company 59
Gilliam, C. T., & Assoc	Tubbs Cordage Company 90
Goodall Rubber Company	
Great Lakes Steel Corp., Stran Division 28	U
	Union Oil Company
H	Union Pacific Railroad
Hamerslag, Jay Platt, Jr., Distribs 98	U. S. Hoffman Machinery Corp 77
Harnischfeger Corp	United States Steel Corp
Haws Drinking Faucet Company	
maws Drinking Faucet Company 00	V
. 1	Victor Equipment Company2nd Cover
11-14-11-6	N/
Johns-Manville Corp	w
Johnson, Edward A., Co., Inc	Willard Engineering Company 78
Johnson Steel & Wire Company, Inc	Worthington Pump & Machinery Corp 72
Johnston, A. P., Company	Wrigley, Jr., William, Company 57

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WALLACE H. MILAM & COMPANY SHIPPERS' TRAFFIC MANAGERS LOS ANGELES 13

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